ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

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YUKON AREA

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Preface

This report presents the bulk of current and historical information concerning the management of commercial and subsistence fisheries in the Yukon area. Data from many special research projects are included in this report; complete documentation of these projects and results will be presented in separate reports.

The Yukon district was given area status in 1971. This report utilizes both the nomenclatures, i.e. "Yukon district" and "Yukon area" interchangeably.

Data presented in this report supercedes information found in previous management reports. An attempt has been made to correct errors in previous reports and previously unrecorded data have been incorporated into this report which are so indicated by the appropriate footnotes.

The report is organized into the following major sections:

1. Area Introduction. This section presents a detailed description of the area, inhabitants, fishery resources, fisheries and management practices.

2. Area Report, 1979. This section presents a detailed comprehensive report of the current year and makes comparisons with previous years.

In order to facilitate use of this report, tabular data has been separated into current year tables and appendix tables where annual comparisons are made. Text for each major section is followed by current year tables and then by appendix tables.

The following is an explanation of how effort and catch per unit effort data, presented throughout this report, have been derived. Boat (or fisherman) hours have been computed, artibrarily assuming that if a fishing boat delivers in any 24 hour fishing period, it is fished the entire period. If the period was more than 24 hours long, then the vessel is assumed to have fished the complete period for as many hours as was open to commercial fishing.

Catch per fisherman (or boat) hour is obtained by dividing the total fisherman hours into the catch for the corresponding period of time.

Total fishermen (or boats) is the total number of fishermen making deliveries, irrespectively of how many deliveries made or days fished during a particular "season". There are a number of fishermen who deliver only once or twice during the entire season.

"Total days fished" is the total number of hours open for commercial fishing during the season divided by 24.

Catch data for 1979 is preliminary. Final 1979 catch data, with only minor revisions anticipated, will be presented in the Appendix Tables of the 1980 Annual Management Report.

AREA INTRODUCTION

Description of Area

The area (district) includes all waters of the Yukon River and its tributary streams in Alaska and all coastal waters from Canal Point light near Cape Stephens southward to Naskonat Peninsula (Figure 2). The Yukon River is the largest river in Alaska, draining approximately 35 percent of the state, and is the fifth largest drainage in North America (Figure 1). The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken at the mouth or adjacent coastal villages, only salmon of Yukon River orgin are harvested in this area.

Fishery Resources

All five species of Pacific salmon are indigenous to the Yukon River drainage (Figure 1) with chum salmon being the most abundant. It is estimated that king salmon, coho salmon, pink salmon and red salmon follow in order of abundance.

Chum salmon are found throughout the Yukon River drainage. Summer and fall chum are the two distinct major runs of chum salmon entering the Yukon River. Summer chums are chiefly characterized by: earlier run timing (early June-mid July), rapid maturation in freshwater, smaller size (6-7 pounds), and larger population. Summer chums spawn primarily in run off streams in the lower 500 miles of the drainage. Fall chums are mainly distinguished by: later run timing (mid-July-early September); robust body shape and bright silvery appearance; larger size (7-8 pounds) and smaller population. Fall chums spawn in the upper portion of the drainage in streams which are spring fed, usually remaining ice-free during the winter. Major fall chum spawning areas include the Tanana, Chandalar and Porcupine River systems and also various streams in the Yukon Territory.

King salmon of the Yukon River are the largest species ranging from 2-90 pounds and averaging 20-25 pounds (sampled from commercial fishery, large mesh gill nets). Spawning populations of kings have been documented in the Andreafsky River system located approximately 100 miles from the mouth of the Yukon River and as far upstream as the headwaters of the drainage in the Yukon Territory of Canada, nearly 2,000 miles from the mouth. Kings enter the mouth of the Yukon River soon after breakup during June and early July.

Coho salmon enter the Yukon River during late July through mid-September, average about seven pounds in weight and spawn discontinuously throughout the drainage. The major coho spawning concentrations documented to date occur in the tributaries of the upper Tanana River drainage.

Pink salmon enter the lower river during late June - mid-July, average approximately 3 pounds in weight and essentially spawn in the lower portion of the drainage (downstream of the village of Grayling).

Red salmon are extremely rare in the Yukon River and only a few individuals are caught each year.

Other species common to the freshwater and coastal marine habitats include: sheefish, several species of whitefish, Arctic char, lake trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, capelin herring, and several species of cods, flatfishes, crabs, shrimps and mollusks. Table 1 presents a list of fishes found in the Yukon area.

Water Quality

Water quality and spawning habitats in the area have been largely preserved in their original condition. Pollution, logging, dam construction and mining activities, except in a few locations, have been to date minimal or nonexistent. It remains to be seen what impact recent oil development activity will have on water quality and fishery resources in the area.

Subdistrict Boundaries

The present subdistrict boundaries were established in 1961 and redefined in 1962, 1974 and 1978. The commercial fishing area is divided into six subdistricts for management and regulatory purposes (Figure 2). The Lower Yukon area includes the coastal waters of the district and that portion of the drainage from the mouth to the Bonasila River (lower three subdistricts). The Upper Yukon area is that portion of the drainage upstream of the Bonasila River to the U.S./Canada Border including the Tanana River (upper three subdistricts). The subdistricts are further subdivided into statistical areas for management purposes. Figures 3, 4, and 5 present the lower three subdistrict statistical area charts. Figures 6, 7, 8, and 9 present the upper three subdistrict statistical area charts. Yukon River mileages are presented in Table 2.

Commercial Fishery History and Description

Historical Catch Trends and Status of Stocks

The first recorded commercial salmon harvest in the drainage dates back to 1903 when 70,000 pounds of king and chum salmon were taken in the Yukon Territory, Canada. A small commercial fishery for these species still exists in Yukon Territory, primarily in Dawson.

The first recorded commercial salmon harvest in Alaska was in 1918 when Carlisle Packing Company operated a floating cannery at Andreafsky (now St. Marys). Relatively large catches of king, coho and chum salmon were made during the first four years of this fishery (Appendix Table 1). Since restrictions were placed only on commercial fishing inside the river's mouth, a majority of the catch was made in "outside" waters.

Because of the existence of a large upriver subsistence fishery, the early commercial fishery met opposition and was closed completely during 1925-1931. Commercial fishing for king salmon was resumed at a much lower level in 1932, and this species has been taken commercially each year since then. Only king salmon were harvested on a sustained basis prior to statehood (1959). During the period 1918-1959 king salmon commercial catches averaged approximately 30,000 fish annually. Since 1921, commercial catches of chum and/or coho salmon have been made during 1952-54, 1956 and since 1961.

Since the 1950's commercial salmon fishing has been permitted only upstream from the mouth of the Yukon River and in the vicinity of Black River. During the 1954-1960 period, a 65,000 king salmon quota was in effect for the river. Of this total, not more than 50,000 could be taken below the mouth of the Anuk River, 10,000 in the area between the mouths of the Anuk and Anvik Rivers and 5,000 upstream from the Anvik River. During these years, fishing was allowed for five and one-half days a week until specific quotas were obtained.

Under the new regulations established by the Department in 1961, the annual king salmon harvest for the entire district has averaged 104,371 for the period 1961-1970. This average compared to 63,023 for the previous period 1952-1960, represents an increase of 66 percent (Appendix Table 1). The greatest catch ever made in the district was 129,706 king salmon in 1967. Catches have declined since 1970, averaging 89,808 fish annually (1971-1978), because of below average runs and regulatory restrictions.

In 1975 the king salmon commercial catch of 63,000 was the smallest since 1960. During the same period (since 1960) commercial fishing effort increased substantially. Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. With the exception of 1971, 1977, 1978 and 1979 escapements have not reached the levels observed during 1960-61.

In recent years the decline of the Yukon River king salmon is believed to be partially attributed to the Japanese high seas mothership fishery in the Bering Sea. The high seas king salmon catches have averaged 231,000 fish annually during the period 1966-1976. A record 450,000 kings were taken in this fishery in 1969 (Appendix Table 23). In some years the Japanese catch has exceeded the total western Alaskan catch (subsistence and commercial). Based on tagging and scale analysis studies it is estimated that in excess of 80% of the Japanese king salmon catches are of western Alaskan origin (Yukon, Kuskokwim, and Bristol Bay stocks). This high seas fishery is intercepting western Alaskan king salmon at a higher rate than Bristol Bay sockeye salmon.

The I.N.P.F.C. Treaty has been recently negotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns can be expected as a result of reduced high seas interceptions.

Since statehood the Yukon River commercial chum salmon fishery has steadily developed especially during the 1970's. During the period 1961-1965 commercial catches averaged 31,850 while during the same

period subsistence chum catches averaged 400,874. As the subsistence commercial fishery declined and regulations were relaxed, coupled with the expansion of the fall chum fishery, the commercial catches averaged 145,295 during 1966-1970. The development of the summer chum fishery and expansion of the upriver commercial fishery resulted in commercial chum catches averaging 725,963 during the period 1971-1978. The largest chum salmon catch in the history of the Yukon River commercial fishery occurred in 1978 when 1,288,829 fish were taken (Appendix Tables 1 and 8).

Prior to the mid 1960's summer chums were used primarily for subsistence, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967, commercial fishing restrictions regarding summer chums have been liberalized as the dependence for subsistence declined. The Yukon River summer chum salmon commercial harvest has increased sharply as a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season); increased fishing effort (including expansion of the upper Yukon fishery); the availability of processing and tendering facilities, higher prices paid to fishermen; the development of Japanese markets; and the occurrence of very large runs in recent years. In 1967 only 11,000 summer chums were taken commercially while in 1978 a record 1,045,092 fish were harvested. The majority of the harvest takes place in subdistricts 1, 2 and 4.

The major summer chum salmon spawning tributaries include the Andreafsky and Anvik Rivers and several others upstream to and including those of the Koyukuk River drainage. Department tag and recovery population estimates indicated total runs of 3.2 and 1.6 million fish in 1970 and 1971, respectively. In 1975 the total Yukon River run was estimated in excess of 5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. In the Anvik River an escapement of over 1 million summer chums was estimated in 1975. Overall, Yukon River summer chum escapements have been good in recent years, however escapements in that portion of the drainage upstream of the Koyukuk River mouth have been variable.

Chum salmon (both summer and fall run) bound for the Yukon River are probably being intercepted by the Japanese mothership fishery in the Bering Sea. This fishery annually harvests 2-4 million fish of which siginficant numbers are believed to be of western Alaska (including Yukon River) origin, although tagging effort in the areas heavily fished by the Japanese has been limited. Also Yukon River chums, in addition to other western Alaska stocks, are intercepted by the U.S. South Unimak commercial fishery as demonstrated by tagging studies. Annual (1971-1979) catches of this interception fishery range from 62-497,000 chums. chums.

The commercial fishery for fall chum salmon in the Yukon River began in the early 1960's, however the fishery has only recently expanded (since 1968). During the 1961-1968 period, catches averaged 41,378 annually and since 1968 (1969-1978) catches have averaged 210,859. The recent development of the fall chum fishery is also reflected by corresponding increases in fishing effort and processing facilities. Because of their good quality (bright, silvery appearance, large size, robust body shape and high oil content), which is related to their destination to spawning

areas in the upper portion of the drainage, fall chums are in great demand and are harvested in all fishing subdistricts. The majority of the fall chum commercial catches are taken presently in the lower three subdistricts.

Fall chums are of less importance for subsistence than summer chums throughout the Yukon River drainage except in that portion of the drainage upstream of the mouth of the Koyukuk River where it is estimated that fall chums comprise 60-75% of the total subsistence harvest.

There is evidence that the early run (late July-early August) of fall chums are bound for the Porcupine River system and Yukon Territory streams. The late run of fall chums (mid August-early September) are believed destined primarily for the Tanana River.

Run magnitudes, based on comparative catch data and limited escapement data, have fluctuated sharply depending on the brood year strength. Very large runs were experienced in 1970, 1971, 1975 and 1979 while small runs occurred in 1973, 1976 and 1978. Aerial survey assessments of escapements began in 1972. Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River system. For example, escapements in the Fishing Branch River have ranged from 353,000 (1975) to 13,000 (1976).

The Department will maintain an overall guideline harvest range of 147,500 - 322,500 (235,000 midpoint) fall chum salmon until future returns from current levels of harvest can be evaluated. The Board of Fisheries at its December, 1978 meeting replaced the previous quota system with the more flexible guideline harvest level concept. Beginning with the 1974 season the Alaska Board of Fish and Game established quotas of 200,000 chum salmon for the lower three subdistricts (combined) and 50,000 combined chum and coho salmon for the upper three subdistricts.

Coho salmon runs of the Yukon River are of lesser magnitude than fall chum salmon and are taken incidential to the commercial fishery for fall chums. Coho catches have averaged 6,829; 14,166; and 19,816 fish during the periods 1961-1965, 1966-1970, and 1971-1978, respectively.

Commercial salmon catches by subdistrict since 1960 are presented in Appendix Table 2.

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income. In recent years fishermen and processing plant employees have received over two million dollars annually (Appendix Table 13). Other forms of employment is often sporadic or nonexistent in this area. The vast majority of all commercial fishermen are Eskimo and Indian residents of the Yukon River drainage.

Most fishermen operate small outboard powered skiffs of 16 to 20 feet in length and do not use gill net rollers, power reels, etc. of any type. In the Yukon area set gill nets, drift gill nets and fishwheels are legal forms of commercial fishing gear.

A list of current Yukon area fishing regulations are presented in Attachment 3.

The majority of the salmon catch is presently processed as a fresh/frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix Table 12). Salmon are processed at shore based or floating operations and also transported via aircraft outside the district for processing. In recent years, 1973-78, the wholesale value of the pack has averaged 7.8 million dollars.

Lower Yukon Area

The lower Yukon area consists of three subdistricts: subdistrict 334-10 (mouth to Anuk River including Black River); subdistrict 334-20 (Anuk River to Toklik; subdistrict 334-30 (Toklik to the mouth of the Bonasila River) (Figures 3, 4 and 5).

Since the onset of the commercial fishing in 1918, the majority of the Yukon River harvest has occurred in the lower river area (primarily subdistricts 334-10 and 334-20) where fishing and processing effort is concentrated and fish quality is higher. Although the summer chum fishery has developed in recent years, the lower fishery during June and early July is still primarily managed for the intensively fished king salmon run.

Beginning in 1961, when king salmon catch quotas were eliminated for subdistricts 334-10 and 334-20, these fisheries have been regulated by scheduled weekly fishing periods. The "king salmon season" (no mesh size restrictions) in these two subdistricts opens June 10 and is closed by emergency order during late June or early July depending on timing and magnitude of the runs. Fishing time during the king salmon season was allowed for four days a week during 1961-1967, but was reduced to 3-1/2 days a week beginning in 1968, to 3 days a week in 1974 and to 2-1/2 days a week in 1977. This was done to provide for adequate king salmon escapements in the face of increasing fishing effort and efficiency.

Commercial fishing effort has increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled. Set gill nets are most commonly used, especially near the river mouth, but the use of drift gill nets has increased. Drift gill nets are legal forms of gear in the lower three subdistricts only. The best measurement of effort is the number of actual fishing vessels operated each year since fishermen commonly used more than one type of gear during the season. A total of 657 fishing vessels operated in the lower Yukon area in 1979. With the advent of the Limited Entry program, fishing effort has apparently stabilized.

Since 1970 subdistrict 334-10 and 334-20 commercial king salmon catches have averaged 79,349 fish annually (1971-1978) (Appendix Table 2).

In subdistrict 334-30 the commercial salmon fishing season opens June 10 and is allowed four days a week until the 1,800-2,200 king salmon guideline harvest level is taken.

Excluding the 1920's, sale of other species of salmon captured during the king salmon season in the area of the present lower two subdistricts has been allowed only since 1967. The incidental catch of

summer chum salmon was limited during this season as fishermen used gill nets of stretched mesh measure of eight inches or greater. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gill net of any mesh size in subdistricts 334-10 and 334-20. In 1973 all mesh size restrictions were lifted during the king salmon season (from June 1 through early July) in order to allow greater opportunity to use small mesh nets which are selective toward the more abundant chums. However, the majority of fishermen continue to fish the larger mesh king salmon nets during the king salmon season.

Since 1961 the commercial fishing season in the lower Yukon subdistricts has been reopened following the closure of the king salmon season. This second season is referred to as the "fall season" and primarily chum and coho salmon are taken. Prior to 1973 the mid-season closure during most of July and often late June was initially for the purpose of insuring an adequate supply of summer chum salmon for upriver subsistence fishermen. This closure also provided protection for the late stages of the king salmon run.

Subsistence fishing for summer chums has declined in recent years and the Department has liberalized regulations to provide for an earlier reopening in July to harvest the surplus. Concurrent with an early reopening of the season, a regulation was promulgated in 1973 specifying gill nets of only 6 inch mesh or less may be fished after a specified date in early July. Use of small mesh gill nets in early July allowed a greater harvest of summer chums and also minimized the king salmon catch. Beginning with the 1976 fishing season a regulation was promulgated which established a flexible range of dates from June 27 to July 5 after which only gill nets of 6 inch or less mesh gill nets may be used.

In recent years (1973-78) the lower Yukon area commercial summer chum salmon catch has averaged 461,509 fish annually (Appendix Table 8).

Fall chum salmon have been harvested in the lower Yukon area beginning in 1961. Since expansion of the fishery in 1969 lower Yukon area fall chum catches have averaged 184,570 fish annually (1969-78). Beginning in 1974 a 200,000 chum salmon quota system (after mid-July) was implemented for the combined lower three subdistricts. Also fishing time was reduced from four to three days a week in subdistricts 334-10 and 334-20. These actions were necessary to stabilize the catch in view of increased fishing effort and to provide for a harvest in the newly developed upper Yukon area fishery. In 1979 fishing time was reduced further to two days a week and the 200,000 quota was replaced by a flexible guideline harvest level of 120,000-220,000 chum salmon.

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the 200,000 chum quota is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1970 have averaged 18,823 annually (1971-78).

The bulk of the lower Yukon River salmon catch is destined for Japanese markets as a fresh-frozen product. Freezer ships and shore base operations that process fresh-frozen salmon are located in the vicinity of Emmonak. Some fresh salmon is transported by aircraft from St. Marys and Emmonak to Anchorage for further processing. Mild curing

and hard salting operations are located at Black River, Chuloonawick and Mountain Village. A floating cannery is located near Emmonak and a shore based cannery is operated at Mountain Village.

Upper Yukon Area

For regulatory and administrative purposes, the upper Yukon area is divided into three subdistricts: Subdistrict 334-40 extends from the mouth of the Bonasila River upstream approximately 350 miles to the mouth of Illinois Cr. near Kallands, subdistrict 334-50, from the mouth of Illinois Cr. upstream to the U.S./Canadian border (approximately 550 miles) and subdistrict 334-60, the Tanana River drainage, of which the lower 225 miles is open to commercial fishing (Figure 6, 7 and 8).

Prior to 1974, the Upper-Yukon area (above the confluence of the Koyukuk River) was designated as one subdistrict. By regulation, commercial fishing was allowed seven days per week until the quotas of 2,000 king salmon and 2,000 chum and coho salmon (combined) were taken. These quotas were established for the purpose of allowing the very limited commercial utilization which had occurred for many years.

In recent years, however, the upriver commercial fishery has expanded. Fishing effort nearly doubled from 1972 to 1973 and processors developed outside markets, due in part to the steadily increasing price of salmon the market was experiencing. In recognition of the developing upriver commercial fishery and the desire of fishermen in communities in the upper portion of the drainage for increased participation, the Board of Fish and Game adopted several major regulation changes prior to the 1974 fishing season. These new regulations provided for substantial increases in the upriver catches, reduced gear conflicts and, at the same time, made provisions for allowing escapement needs to be met:

(1) Subdistrict 334-40 was reduced in size and redefined as that portion of the Yukon River drainage from the mouth of the Bonasila River to the mouth of Illinois Creek at Kallands.

(2) Two new subdistricts were added: Subdistrict 334-50 and subdistrict 334-60.

(3) Salmon catch quotas were established for the upper Yukon area as follows:

   (a) Subdistricts 334-40: 1,000 king salmon and after August 15, 10,000 chum and coho salmon combined for the area.

   (b) Subdistrict 334-50: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area.

   (c) Subdistrict 334-60: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area.

(4) In subdistricts 334-40, 334-50 and 334-60, the weekly commercial fishing period was reduced from 7 to 5 days a week.

Effective for the 1979 fishing season the Board of Fisheries enacted several major regulation changes in the upper Yukon area:

(1) Weekly fishing time in section 4-A of subdistrict 334-40 was reduced to 4 days a week and split fishing periods established for the king and summer chum salmon fishery (June 15-August 1).

(2) King salmon quotas were replaced by guideline harvest level ranges: subdistrict 334-40 (900 to 1,100), subdistrict 334-50 (2,700 to 3,300) and subdistrict 334-60 (900 to 1,100).

(3) Weekly fishing time in section 4-B of subdistrict 334-40, section 5A of subdistrict 334-50 and subdistrict 334-60 was reduced to 4 days a week and split fishing periods established for the fall chum and coho salmon fishery (after August 15).

(4) Chum and coho salmon combined quotas in effect after August 15 were replaced by guideline harvest level ranges: section 4-B of subdistrict 334-40 (10,000 to 40,000), subdistrict 334-50 (10,000 to 40,000) and subdistrict 334-60 (7,500 to 22,500).

Because of the common origin of salmon stocks harvested throughout the length of the Yukon River, the commercial and subsistence fisheries in the middle and upper river subdistricts cannot be considered separate or distinct from those in the lower portion of the drainage. They do however, differ in several important respects.

For reasons of relative abundance, flesh quality and the existing regulation structure, the second, or fall run of chum salmon is the target species of the commercial fishery in subdistricts 334-50 and 334-60. The summer run of chum salmon is of paramount importance in subdistrict 334-40 and comprise in excess of 70% of the total upriver commercial harvest. Tradition, local fishing conditions, efficiency and relative ease of operation combine to make fishwheels the primary type of gear for harvesting chum salmon and account for roughly 95% of the commercial harvest of that species in the upper Yukon area. In contrast, the lower river commercial fishery, as mentioned earlier, focuses primarily on king salmon with only recent emphasis on expanding the commercial fishery for other species of salmon. Local river conditions and regulations dictate the exclusive use of set and drift gillnets in the lower Yukon area.

The last major difference between the two fisheries is their relative size, both in numbers of fishermen and catch. Because of the developing nature of the commercial fishery in subdistricts 334-40, 334-50, and 334-60, and the absence of major summer chum salmon-producing streams in the upper portion of the drainage, the commercial salmon harvest has averaged approximately 25% of the total district harvest for the years 1974 - 1977. During the same period, the upper-Yukon subdistricts have had an average of 182 participating fishermen or approximately 20% of the district total. Final implementation of the Limited Entry Program is expected to stabilize year-to-year fishing effort.

King salmon are of minor importance to the commercial fisheries in the three upper drainage subdistricts having a total guideline harvest

level allocation of 4,500 to 5,500 kings. Normally the king salmon guideline harvest level is not taken in subdistrict 334-40, as most fishermen retain them for subsistence purposes. In subdistrict 334-60, the king salmon guideline harvest level is normally taken during late July and in most years the commercial season remains closed until early September. In the Tanana (village) to Hess Creek area of subdistrict 334-50, however, there is considerable set gillnet effort directed towards the capture of king salmon.

Unlike the lower river fisheries, relatively few summer chum salmon are taken commercially in subdistricts 334-50 and 334-60. Because of their low abundance, advanced sexual maturity and consequent poor flesh quality, summer chum salmon are generally retained for personal use in these areas.

The majority of commercially caught king salmon taken in the upper Yukon area are transported to Fairbanks and sold to local supermarkets and restaurants as a fresh-frozen product. Most chum salmon harvested in the same areas are tendered by small aircraft and boats from collection points (fish camps) along the river and are then flown to processing plants in Unalakleet, Manley Hot Springs, Galena, Nenana, Fairbanks and Anchorage, where the majority are eventually canned. A small portion of the fall chum salmon catch is marketed as a fresh-frozen product. Small quantities of king salmon and fall chums are smoke-cured and sold as "strips", a locally specialty product. Likewise, small numbers of chum salmon taken commercially are dried and sold as dog food.

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and Indian people in the area, the majority of whom reside in excess of 45 small villages scattered along the coast and major river systems. Nearly all of these native people are dependent to varying degrees on fish and game resources for their livelihood.

Subsistence fishermen operate gill nets largely in the main rivers and to a lesser extent in the coastal marine waters capturing mainly salmon, whitefish and sheefish. Fishwheels take considerable numbers of salmon in the upper Yukon and Tanana River. Beach seines are occasionally used near spawning grounds to catch schooling or spawning salmon or other species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, sheefish, blackfish and burbot. Sheefish, pike, char and "tomcod" (saffron cod) are frequently taken through the ice by hand lines.

There is usually little intentional wastage of the fish taken for subsistence purposes. The major portion is sun dried or smoked for later consumption while the head and viscera may be fed to sled dogs.

Comprehensive annual surveys of the Yukon River subsistence salmon fishery were initiated by the Department in 1961. Data obtained cannot be easily compared with that of earlier years which was often incomplete or lacking for many years. Methods and coverage of these earlier surveys were not documented and their accuracy cannot be determined. However, there are records indicating that in excess of one million salmon (mainly

chums) were taken for subsistence in some years during the early 1900's and even as late as 1940 (Appendix Table 1).

The Department's subsistence fishery surveys (personal interview, catch calendar, and/or catch questionaires) obtain catch, effort and other associated data from villages and fish camps along the main river in Alaska, including portions of the Tanana River and Chandalar Rivers. Catch data from the Canadian portion of the drainage has been supplied by personnel of Environment Canada - Fisheries Service (Whitehorse office) since 1962. In recent years, the Department has conducted surveys of Koyukuk River villages.

About 1930 the airplane began replacing the sled dog as mail and supply carrier, starting the gradual decline of the subsistence salmon fishery. This decline has been accelerated in the past years as increased welfare payments and employment opportunities, including commercial fishing activities, have become available to the native people. The reduction in subsistence fishing is not necessarily related to fish abundance, but mainly reflects decreases in effort and dependence due to a changing way of life.

To illustrate changes in effort, there were 393 fishwheels operated on the Yukon River in 1918. Fishwheels are very effective if fished properly. A single wheel is capable of taking from 2,000 to 5,000 chum salmon annually. The number of fishwheels recorded during the 1970 survey was an all-time low of 56, a decrease of 113 since 1961. However, because of the expansion of the upper Yukon commercial fishery, beginning in 1973, the amount of fishwheel gear has increased to 201 units in 1979).

Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. In 1961 each fishing family kept an average of 7.7 sled dogs while in 1972 this figure was down to 3.8 sled dogs. However, due to the renewed interest in sled dog racing, the number of dogs per family increased to 5.9 in 1977. The number of snowmachines owned by fishing families was documented beginning with the 1967 season, when the average number of snow machines per family was 0.4. Since then the number of snowmachines has steadily increased and in recent years the average number of snowmachines has exceeded 1.3 per family (Appendix Table 16).

Reflecting the above changes in effort and dependency, the subsistence salmon catch has substantially decreased since the early 1960's. Comparing catches from villages surveyed each year ("Equivalent catches") the chum salmon harvest averaged 399,001 during 1961-1965. During the period 1966-1973 catches averaged 191,507 a decrease of 54 percent (Appendix Table 16). However, during 1974-1978 the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 254,724. This increase can be attributed to above average size runs, especially summer chums, subsistence roe sales and increasing numbers of recreational sled dog teams.

Subsistence catches of king salmon, which are utilized mainly for human consumption, have remained relatively constant during the period 1961-1978 generally averaging 15-20,000 per year.

The recent evolution of the upper-Yukon and Tanana River subsistence fishery has also differed from that in the lower Yukon. Possibly because of the much older, larger and more sophisticated nature of the commercial fishery in the Yukon delta to Holy Cross area, a more pronounced dependence on a cash income has developed. In contrast, the recent development and limited nature of the commercial fishery in the upper Yukon and the absence of other employment opportunities may have retarded the transition to a cash based economy. For these reasons, it is speculated that residents of Yukon River villages in the Interior retain a greater degree of dependence on fishery resources for subsistence purposes. This is illustrated by the catch data presented in Appendix Tables 17 and 18 which shows that the majority of the subsistence king and chum salmon catches are taken in upper Yukon River villages.

It should be noted that the practice of keeping sled dogs is much more common in the upper Yukon than in the Delta area and is considered a major factor affecting fishing effort. It is also likely that the sale of subsistence-caught salmon roe (legal from 1974-1977) increased subsistence chum salmon catches above normal food and domestic use requirements. Subsistence roe sales were not considered a significant factor affecting domestic use harvests in the twelve major villages in the Delta and lower Yukon River areas.

Subsistence fisheries which target on non-salmon species such as pike, sheefish and whitefish are inadequately documented and their overall significance is not well known. It is suspected, however, that residents of the upper Yukon area are much less dependent on these miscellaneous species than are their downriver counterparts.

Management

The overall objective of the Yukon area research and management programs is to manage the various salmon runs on an optimum sustained yield basis. The commercial fishery is regulated on the assumption that a harvestable surplus, after providing for spawning and subsistence utilization requirements, is available. Subsistence fishing has been designated by the Alaska State Legislature and the Board of Fisheries as the highest priority use. Although, where the dependence upon subsistence fishing has declined, the Department has liberalized regulations to allow development of commercial fisheries.

Management of the salmon runs is further affected by several limiting factors. Since most of the fisheries only became developed or expanded in recent years, there is a lack of adequate comparative catch and return data on which to evaluate the long term effects of increased commercial harvests. In contrast to other management areas in the state where intensive research studies have been conducted for many years, forecasts of actual numbers of salmon returning to the Yukon River system are not available. In addition, due to the character of the fishery (e.g. allocation problems between upriver and downriver fishermen) restricted. For example, the various fisheries scattered over 1,400 river miles are harvesting mixed stocks usually several weeks and hundreds

of miles from their spawning grounds. The Yukon commercial fishery is essentially a "cape fishery" and as a result of fishing on mixed stocks, some tributary populations may be under or overharvested in relation to their actual abundance. For example, in a mixed stock fishery, where it is impossible to manage each stock separately, small spawning populations may be reduced to very low levels or even eliminated.

Due to the turbid water conditions of the main river (and some of its tributaries) and the vast size of the Yukon River drainage, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology. Also in-season management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower river fishery which causes difficulties when attempting to compare catch data. Also, some fishermen use small mesh gill nets, (5 1/2-6 inch) during the king salmon season in order to harvest the larger run of summer chums. As a result, catch data in recent years may not be comparable to earlier years when 8-8 1/2 inch stretched mesh gill nets were primarily used.

Post season estimates of escapements in selected tributaries are being developed by establishing annual index areas. These estimates of spawning stocks, which may be limited by unfavorable stream and survey conditions (e.g. high water, inclement weather), are indicators of the total escapement. Comparable index stream estimates may eventually be of value in developing run forecasts.

It has been a policy of the Alaska Department of Fish and Game to maintain current levels of commercial utilization in order to establish definite trends in subsistence utilization and to obtain more information on the relationship between the salmon catch and return. It should be pointed out that increases in commercial fishing effort and efficiency are expected in some subdistricts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained or even made more restrictive.

New research projects have been initiated and other programs are planned, contingent on additional funding, for obtaining the biological information necessary for better management of the salmon runs. For example, a comprehensive tag and recovery program was begun in 1976 to determine the relative timing and distribution of fall chum salmon stocks past the commercial fishery. If various stocks can be identified from this program and scale analysis studies, then the fishery can be effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of the escapement in the main river, and upgrading escapement documentation in tributary streams.

As a result of the above factors the management of the Yukon River salmon runs must take a conservative approach. This has been achieved by establishing harvest goals, mesh size restrictions, area guideline harvest levels, reduced weekly fishing periods, fishing season closures, etc.

The basic regulation that governs the commercial salmon harvest in the district is the scheduled weekly fishing period and/or guideline harvest levels. Commercial fishing is normally allowed for a total of

from three to five days a week during the open season which depends on the subdistrict and species involved. Season guideline harvest levels, are utilized for the king salmon fisheries of the upper four subdistricts and the fall chum fishery throughout the district. Fishing effort usually occurs during the entire run and not just during any particular segment of the run.

During the fishing season if it becomes apparent that the run is substantially smaller or larger (based on analysis of comparative commercial and/or test fishing data) than needed for escapement and subsistence requirements, then the commercial harvest rates can be adjusted through the use of the emergency order or, less frequently, emergency regulation authority. A list of emergency orders and regulations dealing with changes in fishing time and other regulations issued for the Yukon area in 1979 is presented in Attachment 1. Also presented are 1979 regulation changes promulgated by the Board of Fisheries during its December, 1978 and April, 1979 meetings (Attachment 2). A complete list of Yukon district current commercial and subsistence fishing regulations are presented in Attachment 3. A copy of the 1979 Yukon Area Salmon Management Plan is presented in Attachment 5.

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in the state. The permanent staff assigned to the Yukon area includes four positions--two area management biologists, one assistant area management biologist and one research biologist. In addition approximately 15 summer employees are hired each season to assist the permanent staff in conducting various management and research studies. Also the staff aids in the enforcement of regulations in cooperation with the Fish and Wildlife Protection Division (Department of Public Safety).

Operating expenses for the Yukon area salmon management and research program from July 1, 1978 through June 30, 1979 were $256,200. State and federal funds provided $236,300 and $19,900 respectively of this budget.

In addition to the salmon management and research programs, the staff works to obtain needed information to determine the potential for commercial fisheries on underutilized species such as whitefish.

A unique problem in the lower river area is the language/communication barrier. Many of the older native people cannot read or speak English. Therefore, the staff must often use translators when conducting the many public meetings that are annually held throughout the area. While it may normally take only half an hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in education and information, a weekly fishery program and special field announcements are broadcasted during the fishing season over radio stations KNOM and KICY in Nome, KYUK in Bethel and various radio stations in the Fairbanks area.

Special Studies

Attachment 4 lists special studies undertaken during 1979 and includes a summary of objectives, procedures and results for each.

Area Season Summary, 1979

In 1979 the king and fall chum and coho salmon runs were judged above average in magnitude; however, the summer chum salmon run was considered below average to average in magnitude based on comparable catch and escapement data.

In 1979 there were 129,056 kings; 17,110 cohos; and 1,165,980 chums, totaling 1,312,146 salmon taken commercially. This was the second largest harvest recorded for king and chum salmon and for all species combined (Appendix Table 1). Tables 4 and 5 present 1979 commercial salmon catches by fishing season and statistical areas. Tables 7 through 12 present daily catch data for each subdistrict.

In 1979 the king salmon catch was above the previous five year average of 88,869 fish and was exceeded only by the record catch of 129,706 fish in 1967. The 1979 catch data presented in this section does not include king and chum salmon taken commercially by Canadian fishermen in Yukon Territory (Appendix Table 1).

The 1979 commercial chum salmon catch exceeded the previous five year average by 222,237 fish. The harvest was composed of 803,500 summer and 362,480 fall chums (Appendix Table 8). The fall chum catch was a record exceeding by 49 percent the previous high catch of 273,158 fish in 1974.

In 1979 the commercial coho salmon catch was similar to the previous five year average of 17,553 fish.

Subsistence harvests in 1979 in the Yukon area (excluding Yukon Territory) were estimated at 31,005 king and 439,328 chum and coho salmon combined.

In 1979 a total of 790 CFEC gill net permits and 161 fishwheel permits were issued in the area. Table 6 shows the residency of all persons issued C.F.E.C. permits for 1979. The actual number of commercial fishing vessels, that made at least one salmon delivery during the season, are shown in Appendix Table 4.

The majority of the king salmon catch was processed primarily as a fresh/frozen product and to a lesser extent by canning and mild curing hard salting. The majority of the chum and coho salmon were fresh/frozen. Production of salmon roe totaled 410,540 pounds in 1979, including 58,683 pounds of salmon roe purchased from commercial fishermen in the upper Yukon area. Commercial salmon production data is presented in Appendix Table 12. All buyers and processors operating in the Yukon district during 1979 are listed in Table 3.

Yukon district commercial fishermen received a record $7,619,500 for their catches in 1979. In addition, a minimum estimate of $1,210,000 in wages was earned by processing plant employees and tenderboat operators. The latter figure was obtained from information supplied by a majority of the buyers and processors. The first wholesale value of the 1979 pack was estimated at a record $19,048,800 (Appendix Table 13.).

Average fish prices and salmon weights from 1960-1979 are presented in Appendix Tables 14 and 15, respectively.

Commercial Fishery, 1979

Lower Yukon Area

The 1979 lower Yukon (subdistricts 334-10, 334-20 and 334-30) commercial salmon catch totaled a record 968,747 fish which was comprised of 122,734 king; 831,849 chum (610,728 summer and 221,121 fall chums) and 14,164 coho salmon.

Lower Yukon fishing effort, in terms of the actual number of participating fishing vessels, was similar to 1978 (Appendix Table 4). In 1979 a total of 726 CFEC gillnet permits (including transfer permits) were issued for the lower Yukon area (693 permits in 1978).

King Salmon: The timing of the king salmon runs entering the mouth of the Yukon River was very early and was attributed to the early breakup of the lower river ice cover (the main river was clear of ice by May 20) and also the relatively ice-free conditions in the Bering Sea. The first reported king salmon caught in the lower river occurred near Emmonak (mile 24) by a local subsistence fisherman on May 24. Kings were entering the river before this date however, as the first king salmon caught upriver occurred on May 23 at Marshall (Mile 161).

During late May and during the first week of June subsistence fishermen in the lower river made excellent king salmon catches. As per the strategy outlined in the Yukon Area Management Plan, the commercial fishing season in subdistricts 334-10 and 334-20 was open early by emergency order (June 3 in subdistrict 334-10 and June 4 in subdistrict 334-20) before the normal June 10 opening date - because of the strong early run of kings in the main river as evidenced by the subsistence catches.

Overall throughout the season, the king salmon run was judged above average in magnitude and probably was one of the largest runs of kings since statehood. This assessment was based on analysis of comparative catch data and subsequent spawning ground surveys throughout the drainage. The lower Yukon king salmon catch this year was primarily composed of 5 (42%) and 6 (39%) year old fish from the 1974 and 1973 parent years, respectively. The smaller size fish this year (20.9 lbs.) in the lower Yukon commercial catch reflected the higher percentage of 5 (and 4) year old fish in the run.

Comparative subdistrict 334-10 commercial king salmon catch data is presented in Appendix Table 5 and 6.

Peak commercial king salmon catches in subdistrict 334-10 were made during the periods June 11-12 (19,510) and June 18-19 (16,709). In subdistrict 334-20 king salmon catches peaked during the periods June 13-15 (14,176) and June 20-21 (7,169). A record 41,357 kings were taken

in subdistrict 334-20.

The distribution of king salmon catches during the king salmon season in the delta area ranged from very good in the middle mouth (13,144) north mouth (10,897) and the Head of Passes and Fish Village areas (27,673) to very poor at Black River where unfavorable winds resulted in a catch of only 970 fish (Appendix Table 7).

The early season ("king salmon season") - no mesh size restrictions - ended after June 23 in subdistricts 334-10 and 334-20 when by emergency order only gillnets of 6 inch or less mesh size could be operated. This action provided for increased catch efficiency of summer chums. A large incidental catch of 22,489 kings was taken with the smaller mesh size gill nets. Normally the incidental king catch ranges from 5-8,000 kings in subdistricts 334-10 and 334-20.

The commercial fishing season in subdistrict 334-30 was closed after only three days of fishing by emergency order on June 16 when the 1,800-2,200 king salmon guideline harvest level was taken (3,073 actual catch). The season did reopen on June 25 to fishing with gillnets of 6 inch or smaller mesh and the incidental catch of kings totaled 2,035 fish. The total season catch in subdistrict 334-30 of 5,108 kings was second largest ever recorded.

Summer Chum Salmon: The summer chum salmon run was also early and the first fish was caught on May 28 near Emmonak in the south mouth area. The peak of the summer chum run (based on test fishing catches) on the lower river occurred during June 10-11, June 24-26 and July 2-5.

A total of 137,083 summer chums were taken during the king salmon season (no mesh size restrictions) in the lower Yukon area. The majority of the catch (473,645) was taken during the fall or second season with 6 inch or less mesh gillnets. In subdistrict 334-30 a record 43,330 summer chums were taken by 32 fishermen during the fall season which was opened by emergency order on June 25.

Comparative summer chum salmon catch data for subdistricts 334-10 and 334-20 are presented in Appendix Table 9.

Fall Chum Salmon: The first fall chum was taken in the lower portion of subdistrict 334-10 during the fishing period July 5-7. During subsequent fishing periods the proportion of fall chums in the catch slowly increased until the July 26-27 fishing period when the catch was almost exclusively fall chums. Fall chums characteristically exhibit very erratic run timing in the lower Yukon River. For example, peak commercial catches in the lower Yukon area occurred during August 5-11 when 108,792 fall chums were taken. A total of 229,403 chums were taken toward the 120,000-220,000 chum guideline harvest level in effect for the lower three subdistricts combined and the fishing season was closed by emergency order August 13-15. Record fall chum catches were taken in subdistrict 334-20 (94,042) and subdistrict 334-30 (25,955) and was attributed to the entry of large numbers of fall chums through the delta area of subdistrict 334-10 during a closure on August 4-6.

Based on evaluation of commercial and test fishing (south mouth only) data in the lower Yukon River the strength of the run appeared to

be average to above average. However, the fall chum run appeared to peak later this year. After the closure of the commercial fishing season large numbers of fall chums entered the mouth during late August. Also substantial numbers of fish entered the middle mouth area. Subsequently in the progression of the run upriver, commercial and subsistence catch data indicate that the magnitude of the run was very strong.

Comparative fall chum salmon catch data for subdistrict 334-10 is shown in Appendix Tables 10 and 11.

Coho Salmon: The first coho salmon caught in the lower Yukon area occurred on July 2 and was taken in Department test fishing nets in the middle mouth area. Due to the early closure of the fishing season the commercial catch was reduced. Cohos normally are most abundant during late August. Coho salmon are of minor importance and the size of the catch is dependent on the amount of fishing effort exerted for the more abundant fall chums.

A total of 12 processors operated in the lower Yukon area during 1979. One new processor operated this year: Whitney Fidelgo (Emmonak). Most of the catch was processed as either a fresh/frozen product with the balance canned and mild cured/hard salted.

Upper Yukon Area

During 1979, a total of 343,073 king, chum and coho salmon combined were commercially harvested in subdistricts 334-40, 334-50 and 334-60 (Table 4). The catch was composed of 6,322 kings; 192,446 summer chums; 141,359 fall chums and 2,946 coho. These totals represent 26% of the 1979 Yukon area production and is 30% above the recent five year average.

A total of 166 fishwheel and 64 set gillnet interim and permanent entry permits were issued for the 1979 season. This compares with 161 fishwheel and 68 gillnet permits issued in 1978. The established maximum numbers for this fishery are 126 fishwheel permits and 63 net permits but these gear levels are consistently exceeded. Actual numbers of fishermen making at least one delivery during 1979 was 179 (Appendix Table 4). Participation by subdistrict was as follows: subdistrict 334-40, 90; subdistrict 334-50, 49; and subdistrict 334-60, 40 fishermen.

During the course of the season, a total of nineteen buyers and/or processors operated in the upper Yukon subdistricts. Most of the catch was processed as a fresh/frozen product with lesser amounts canned or smoked and dried for human consumption or dog food. The majority of the catch is transported (air freight) outside the district for processing.

King Salmon: Post season analysis of catch and escapement data indicate the 1979 king salmon run to be one of the largest on record.

A record commercial harvest of 1,969 kings was made in subdistrict 334-40. Landings of kings peaked during the period ending July 13 (Table 10). An emergency order was issued on July 9, requiring commercial net fishermen to switch to six inch of smaller mesh nets in order to minimize the capture of king salmon after that date. Most of the kings produced in this subdistrict originated in the Ruby - Kallands area (334-43) with lesser amounts coming from statistical areas 334-41 and 334-42.

The documented commercial catch of king salmon in subdistrict 334-50 totaled 3,520. The king run peaked in this area during the first week of July (ten days to two weeks earlier than normal) when 1,517 kings were landed by 28 fishermen (Table 11).

An attempted strike for higher prices by Rampart fishermen early in the season resulted in buyers boycotting that area during the king and summer chum runs. It is thought that individual fishermen from Rampart were able to market at least part of their catch by transporting it 90 miles upriver to the pipeline crossing and from there to Fairbanks via the road system. The majority of these sales were not documented.

It is thought that in the Tanana River (subdistrict 334-60) the reported harvest of 833 kings substantially understates the actual commercial catch in that area. It is believed that king salmon catches are not accurately documented so that the more lucrative summer chum fishery will remain open.

The run peaked during the period ending July 18 when 20 fishermen made deliveries totaling 377 kings. Timing of the 1979 king run appeared normal although subsistence fishermen reported taking kings as early as June 18.

Summer Chum Salmon: The summer chum salmon run to the upper Yukon was judged to be below average in magnitude. The total commercial harvest of summer chums for subdistricts 334-40, 334-50 and 334-60 combined was 192,446 which is approximately 22% below the recent 4 year average.

The majority of this harvest (72%) took place in the lower portion (Anvik to Koyukuk) of subdistrict 334-40. Two factors aside from the magnitude of the run contributed to the depressed catch in 1979. The first is the fact that fishing time in section 334-41 of subdistrict 334-40 was reduced from five to four days per week (by the Board of Fisheries) in order to provide for more balanced harvests and better escapement distribution. Secondly, because of market problems and aircraft shortages which developed because of the large return to Bristol Bay, buyers were unable to purchase as many fish as could have been harvested. Kaltag fishermen for example, had no market for their catch for 3 to 4 days and during early July were able to sell female chums only. In Galena and Ruby, fishermen were only able to market "brite" fish for several days as the market for "dark" chums had temporarily collapsed.

The run appears to have peaked during the last week of June when 62 fishermen made landings totalling 58,617 chums (Table 10).

Commercial catches of summer chums in subdistrict 334-50 was only 614 (Table 11) the lowest ever recorded. This can be partially explained by the fact the commercial fishing season was closed by emergency order on July 12, prior to when the chum run normally peaks in this area.

Commercial catches of summer chums in the Tanana River (subdistrict 334-60) totaled 19,880 and the run was judged to be above average in magnitude. Based on reported catches, the run peaked at Nenana during the last period in July when 6,255 chums were landed by 20 fishermen.

Fall Chum Salmon: The 1979 fall chum run to the upper Yukon River drainage was judged to be exceptionally strong. Comparative commercial catch data for the three upriver subdistricts is not valid because of regulation changes (e.g. flexible guideline harvest level which replaced the previous quotas). These changes allowed the management staff to provide for substantially larger harvest levels if warranted by a strong run. As a result of these regulation changes and a large return, the total upriver commercial harvest was 141,359 fall chums, nearly 2-1/2 times the previous record.

Fall chums were first taken in the Galena area (subdistrict 334-40) during the first week of August. Catches fell off slightly during the following week and the run peaked during the period ending September 7; the season was closed on that date (Table 10).

Partially because of an increase in allowable harvest in this area, fishermen in the Ruby area were able to participate fully in the fishery during 1979. Twelve Ruby fishermen sold approximately 22,000 fall chums, or about 43% of the 50,375 fish from that subdistrict.

The fall chum run was first detected in the Tanana to Rampart area during the first week of August. Subsistence fishermen in the "Rapids" area reported fishwheel catches of 200-400 chums per day and the commercial season was reopened in subdistrict 334-50 on August 7, approximately one week earlier than normal. The run peaked between August 21 and August 26 when 38 fishermen delivered 18,177 chums (Table 11). The season was closed on September 2, however about September 4, a second run entered the subdistrict and subsistence fishermen reported excellent catches until mid-September.

The timing of the fall chum run to the Tanana River (subdistrict 334-60) appeared normal, however based on comparative subsistence catches from Manley and Nenana, it appeared that many of the early fall chums were bound for the Kantishna (Toklat R.) drainage.

The commercial fishing season in subdistrict 334-60 was reopened on September 11 and was closed on September 16 after only four fishing days. The total catch of fall chums for the Tanana River was 34,316 (Table 12).

Coho Salmon: This species, because of its relatively low abundance and late run timing is of minor importance to the upriver commercial and subsistence fisheries. During 1979, an estimated 2,946 coho were harvested commercially in the upper Yukon area; of these, approximately 95% were taken in the Tanana River. It should be noted that (for fish ticket purposes) fishermen and buyers make little effort to distinguish fall chums from cohos. The catch statistics therefore are estimates based on daily estimates of species composition of catches documented by Fish and Game technicians stationed at Manley and Nenana.

Salmon Roe Sales

In December, 1977 the Board of Fisheries repealed regulations allowing the sale of subsistence caught salmon roe; it remains legal however, for commercial fishermen to sell roe during open periods of the

commercial salmon fishing season. In most cases in the upper Yukon the value of (chum) salmon roe exceeds the value of the fish and for that reason, relatively large amounts of eggs are sold separately from the fish.

Fishermen in statistical area 334-41 of subdistrict 334-40 accounted for the majority of roe sales in 1979. Lesser amounts of salmon were sold in subdistricts 334-50 and 334-60 and no roe sales were documented for the lower Yukon River area.

The approximately 59,000 pounds of roe sold during 1979 represents roughly 73% of the average 1974-77 production and is somewhat higher than 1978 levels probably because of market and transportation difficulties mentioned earlier in this report.

UPPER YUKON AREA SALMON ROE SALES BY COMMERCIAL FISHERMEN, 1979 1/

	King Salmon Season			Fall Season			
Subdistrict	King	Chum 2/	Subtotal	King	Chum	Subtotal	Total
4	0	35,317	35,317	0	3,199	3,199	38,516
5	0	1,009	1,009	0	8,097	8,097	9,106
6	0	3,891	3,891	0	7,170 3/	7,170	11,061
Totals	0	40,217	40,217	0	18,466	18,466	58,683

1/ All figures in pounds of unprocessed product.
2/ Includes some king roe.
3/ Includes some coho roe.

Another factor which contributed to the large volume of roe sales was the very large fall chum run experienced in 1979.

Illegal sales of subsistence caught roe continues to be a serious problem, particularly in the Tanana River subdistrict. Efforts by the Division of Fish and Wildlife Protection have been largely ineffective in controlling this illegal commerce in roe. Subsistence caught roe is thought to account for a portion of the documented production and another, unknown quantity, is thought to have entered commercial channels without documentation of any kind.

Subsistence Fishery, 1979

During 1979, an estimated 35,205 kings, 442,534 chums and 9,794 coho salmon were taken for subsistence purposes in the Yukon River drainage (including Yukon Territory). In addition a minimum of 53,734 whitefish and 10,162 sheefish were estimated taken within the district.

The subsistence king salmon harvest exceeded the previous record catch (1963) by nearly 10% and is attributed to the exceptionally strong run. The chum and coho salmon harvest was third highest since 1961, exceeding the previous 5 year average by 162,000 fish or 56%, and is attributed to the very large fall chum salmon run.

Table 14 presents 1979 catch data for each Yukon River community and Appendix Table 16 shows comparative Yukon River drainage subsistence

catch data for the period 1961 through 1979. Subsistence salmon catches by village for the years 1961-1979 are presented in Appendix Table 17 and 18.

Lower Yukon Area

An estimated 10,410 kings and 79,587 chum and coho salmon combined was taken by 424 fishing families in the three lower river subdistricts. These figures represent 34% of the king salmon catch and 18% of the district "small salmon" harvest. The 424 fishing families surveyed represent 38% of the 1105 families known to have fished within the district during 1979. Due to the early breakup of the Yukon River, subsistence fishermen experienced good fishing on the early king salmon run prior to opening of the commercial fishing season.

The coastal villages of Hooper Bay, Chevak and Scammon Bay (84 fishing families) reported an harvest of 20,900 pounds of herring.

Upper Yukon Area

Not including domestic and subsistence catches made in Yukon Territory, an estimated 20,595 king and 359,741 chum and coho combined were harvested in the upper Yukon subdistricts during 1979. These figures represent 66% and 82% of the district king and "small salmon" harvest respectively. Catches for each lower Yukon fishing family averaged 43 kings and 188 salmon of other species compared to the approximately 30 kings and 528 "small salmon" taken by the 681 known fishing families in the upper Yukon. The disproportionate number of chums taken by upriver fishermen can be attributed to a larger number of sled dog teams in the Interior.

Subsistence fishing permits are required in five general areas within the Yukon district: 1) the Tanana River drainage upstream of the Wood River confluence; 2) the Yukon River between Hess Cr. and Dall River; 3) the Yukon River drainage between the upstream mouth of Twenty-two Mile Slough and the U.S./Canadian border; 4) the Yukon River drainage between the mouth of the Rodo and Nowitna Rivers; 5) the Middle Fork of the Koyukuk River drainage between Dry Gulch and Hammond River.

In the Tanana drainage, a total of 246 permits were issued for subsistence salmon fishing and 199 successful fishermen reported catches of 264 kings, 5,865 chums and 978 cohos.

In the Hess Creek to Dall River portion of the Yukon River drainage, 54 permits were issued; of these 7 were issued to residents of Stevens Village and most of the remaining 47 went to Fairbanks area residents. The 34 successful Fairbanks resident fishermen (who reported catches) took an estimated 899 kings and 8,233 chums.

In the Circle and Eagle areas 75 permits were issued and catches for these villages are presented in Table 13. No permits were issued for either of the remaining permit areas.

In addition 32 permits were issued authorizing the taking of salmon carcasses in the vicinity of the Delta River near Big Delta and 25 fishermen reported collecting 3,017 (chum) salmon carcasses.

Enforcement, 1979

Lower Yukon Area

Enforcement activities of the Division of Fish and Wildlife Protection consisted of a 2-man crew equipped with a river skiff based at St. Marys. Boat and aircraft patrols were made periodically in the lower Yukon River area and as far upriver to the village of Anvik. In general compliance with regulations was good, considering that surveillance of the fishery by F.W.P. was lacking in quantity and quality compared to the previous two years. The major enforcement problem concerned fishing during closed periods.

Upper Yukon Area

Compliance with commercial and subsistence fishing regulations was much improved over previous years. The most common violations were commercial and subsistence fishing during closed periods. The illegal sale of subsistence caught fish and roe continues to be a problem however, particularly in the Tanana River subdistrict. Also the entry of subsistence caught fish and roe into commercial channels under the guise of bartering was widespread in subdistricts 334-50 and 334-60 during the fall chum run.

Escapement, 1979

The Yukon River drainage is too extensive for complete aerial survey escapement coverage during any given season. In addition, poor survey conditions prevented surveys from being flown during some years or have resulted in minimum counts. Table 15 presents aerial survey escapement data for all streams surveyed in 1979.

Appendix Table 19 presents comparative king salmon escapement data for selected tributaries during the 1959-1979 period. In 1979, king salmon escapements into the major spawning areas ranged from average to above average. Record escapements were documented in the Gisasa River (484), Salcha River (4,789), Nulato River (1,507) and Nisutlin River (713).

In the Yukon Territory, surveys indicated average to above average king salmon escapement levels. The Whitehorse Dam Fishway count of 1,184 kings was the largest recorded since 1962. Due to possible problems associated with passage of adults through the fishway and mortality of smolts through turbines, the Whitehorse Dam Fishway is probably not a reliable index of king salmon escapements in the Yukon Territory. Alternate index areas should be established elsewhere to better monitor escapements.

Appendix Tables 20 and 21 present comparative summer and fall chum salmon escapements for selected streams. The magnitude of the summer chum escapements were generally average throughout the drainage (but significantly less than the 1975 parent year). In 1979, a total of 460,315 summer chum salmon spawners were documented in selected tributaries throughout

the drainage. A minimum of 280,537 chums were documented in the Anyik River system. In the Andreafsky River (East and West Fork), aerial surveys indicated below average to average escapements as 109,862 chum salmon spawners were enumerated in this system.

During the past eight years the Department has conducted intensive surveys of fall chum and coho salmon spawners in the upper Yukon River drainage. Several major previously undocumented spawning areas have been identified in recent years. In 1979, escapements of fall chums were average to above average in the Tanana River system but average elsewhere. In the Toklat River a record escapement of 172,133 fall chums was documented in 1979. In the Yukon Territory, a total of only 44,080 fall chums was enumerated in the Fishing Branch River, a tributary of the Porcupine River, in 1979 compared to the exceptionally large parent year escapement of 353,282 documented in 1975.

Tanana River drainage coho escapements were above average in 1979. Comparable coho salmon escapement data is presented in Appendix Table 22.

OUTLOOK FOR 1980

King Salmon

It is difficult to predict the relative magnitude of the 1980 Yukon River king salmon run. The majority of the king salmon expected to return in 1980 will probably be composed of six-year-old fish originating from the 1974 brood year. There are indications based on commercial catch and escapement data, that the 1974 brood year run was below average to average in magnitude. However, survival (favorable environmental conditions and possible reduced high seas fishery interceptions) of the 1974 brood year progeny was apparently excellent based on the large numbers of 5 year olds returning in 1979. Therefore, a large "carryover" of 6 year old fish may occur in 1980. Five-year-olds (1975) brood year should contribute significantly to the run in 1980.

The Japanese mothership fisheries in the high seas during recent years may possibly affect the numbers of king salmon returning to western Alaska in 1980. Most of the high seas king salmon harvest is composed of immature four-year-old fish, which normally return as six-year-olds two years later. Scale analysis studies conducted by the National Marine Fisheries Service indicate that the majority (in excess of 80%) of the king salmon intercepted by the Japanese mothership fishery originated from western Alaska rivers (including the Yukon River). Japanese mothership Bering Sea king salmon catch data is presented in Appendix Table 23. The I.N.P.F.C. Treaty has been recently renegotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns can be expected as a result of reduced high seas interceptions.

In summary, based on available brood year run size data, the 1980 run of kings is expected to be average to above average in magnitude. If a poor run develops, fishing time restrictions may be required during the 1980 season in order to obtain adequate spawning escapements. Until future returns can be studied, the commercial harvest of Yukon River king salmon should not exceed 80-90 thousand fish unless an exceptionally large run is indicated. This allowable harvest has been revised downward

from the previously established limit of 90-105,000 kings in view of below average size runs and the necessity to provide the adequate escapements.

Summer Chum Salmon

Normally, Yukon River summer chum runs are primarily composed of four-year-old fish. The return of four-year-olds in 1980 will be dependent on the strength of the 1976 brood year run and the survival of the resulting progeny. Based on the available commercial and test fishing catch and escapement data, the summer chum run in 1976 was average to above average in magnitude. The contribution of five-year-old fish (1975 brood year) in 1980 is not expected to be significant based on the weak return of 4-year-olds in 1979.

In summary, it is expected that the magnitude of the 1980 Yukon River summer chum run will be average. The expected commercial harvest should total 600,000-1,200,000 fish. If the summer chum run in 1980 is below average in magnitude, fishing time restrictions will be necessary to insure adequate escapements.

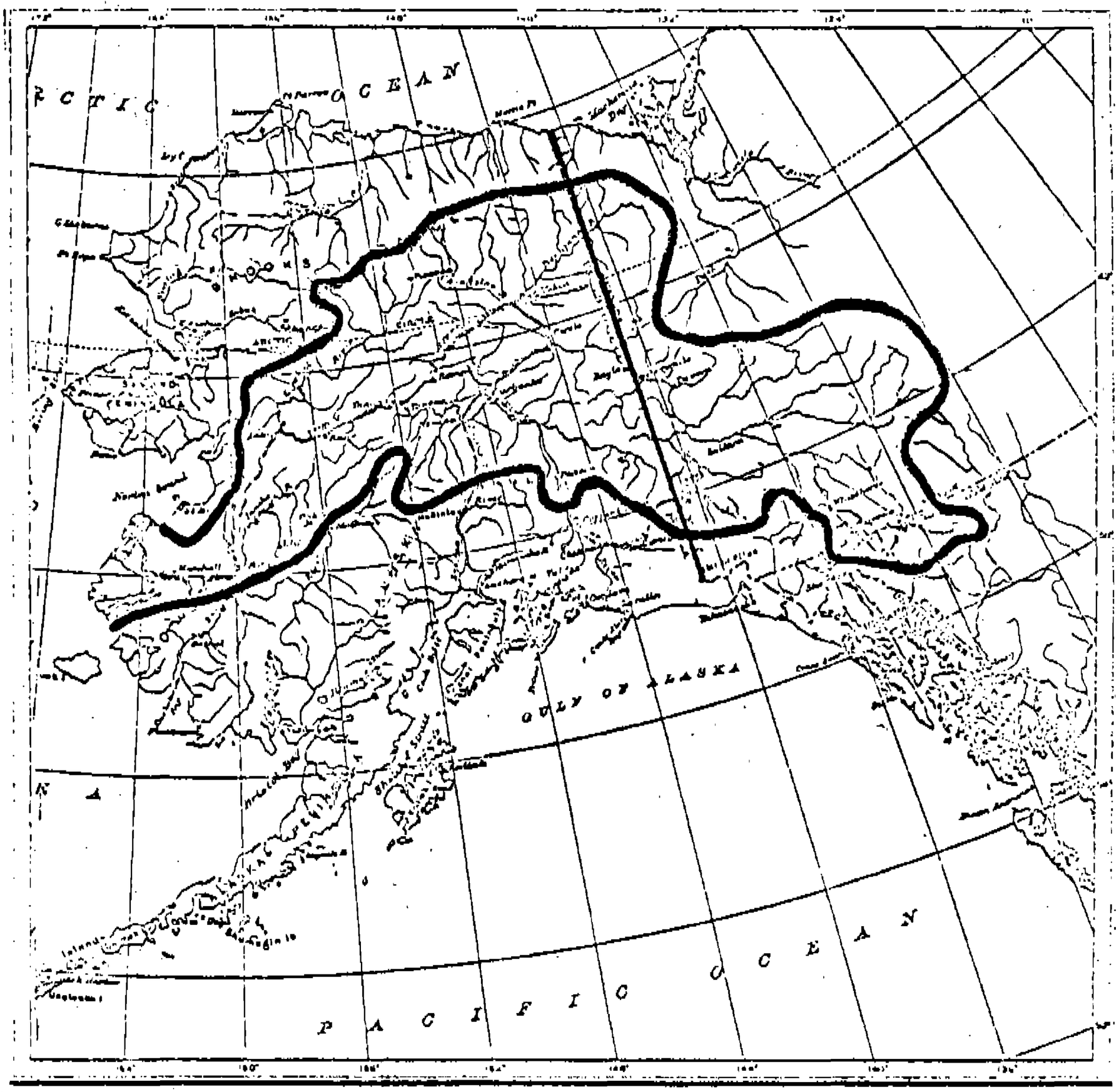
Fall Chum Salmon

Four-year-old fish from the 1976 brood year are expected to be the predominant age class of the 1980 run. Escapements of fall chums in 1976 were judged to be below average in abundance (Appendix Table 21). However, the return of five-year-olds (1975 brood year) may contribute significantly to the return in 1980 based on the high percentage (80%) of 4 year olds occurring in the very large 1979 run.

In summary, the magnitude of the 1980 Yukon River fall chum is expected to be below average to average. The expected commercial harvest should approximate 235,000 fish, the midpoint of the overall guideline harvest level. If the fall chum run in 1980 is below average in magnitude, fishing time restrictions will be necessary in order to provide for adequate escapements.

Coho Salmon

Four-year-old fish (1976 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated below average escapements in 1976. The return in 1980 is expected to be of similar magnitude. The coho salmon catch is expected to total 20,000-30,000 fish, depending on amount of fishing effort exerted on the fall chum run and the duration of the fishing season.



YUKON RIVER BASIN

(330,000 square miles)

FIGURE 1

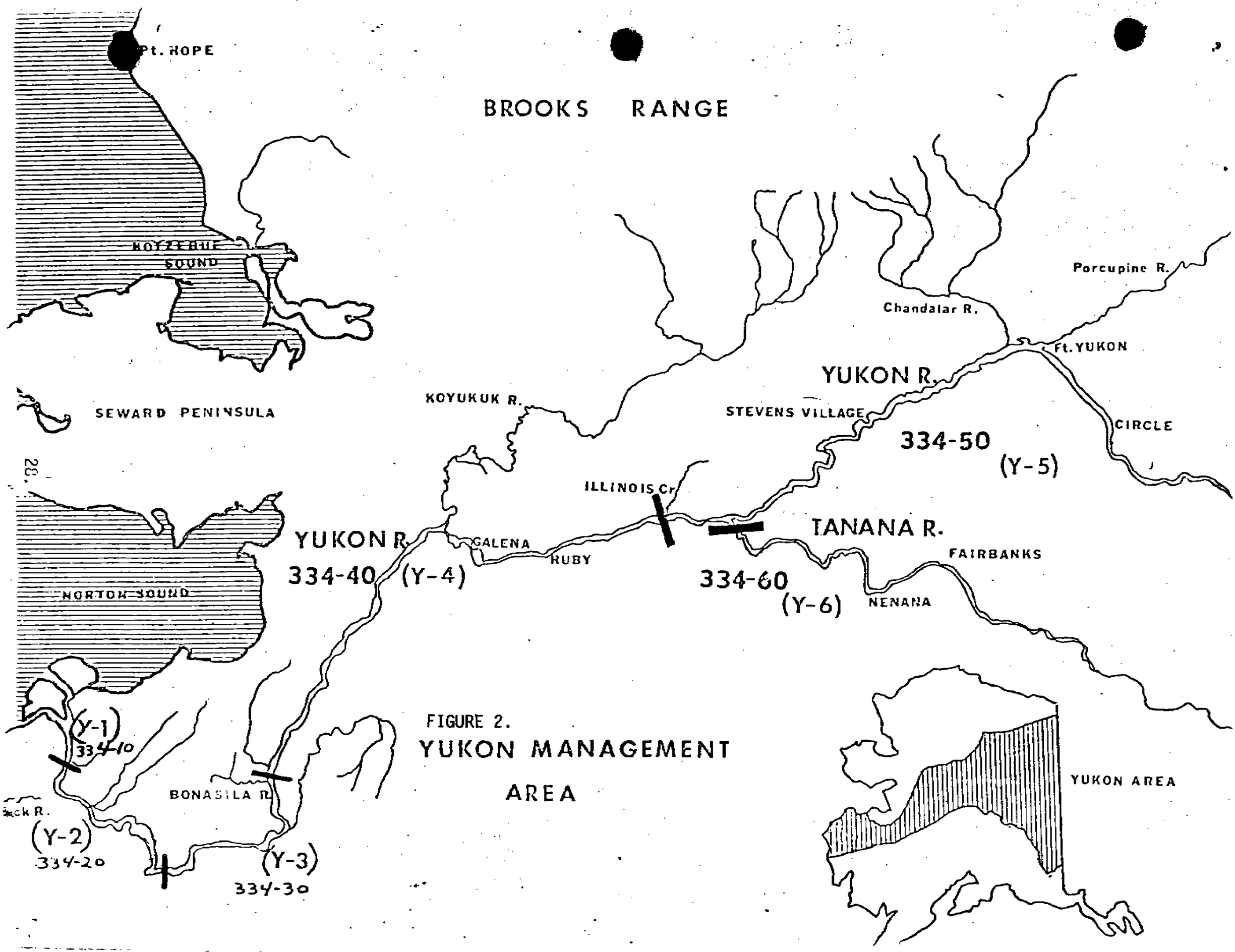


FIGURE 2.
YUKON MANAGEMENT
AREA

YUKON RIVER DELTA

MIDDLE MOUTH

NORTH MOUTH

334-15

KOTLIK

BUGOMOWIK MOUTH

334-16

334-14

KWIGUK MOUTH

Emmonak

Kwiguk

334-17

ALAKANUK MOUTH

Alakanuk

SUNSHINE BAY

334-12

334-13

SOUTH MOUTH

Fish Village

SHELDON'S PT.

BLACK RIVER

334-18

334-11

ANUK RIVER

FIGURE 3. YUKON SUBDISTRICT 334-10

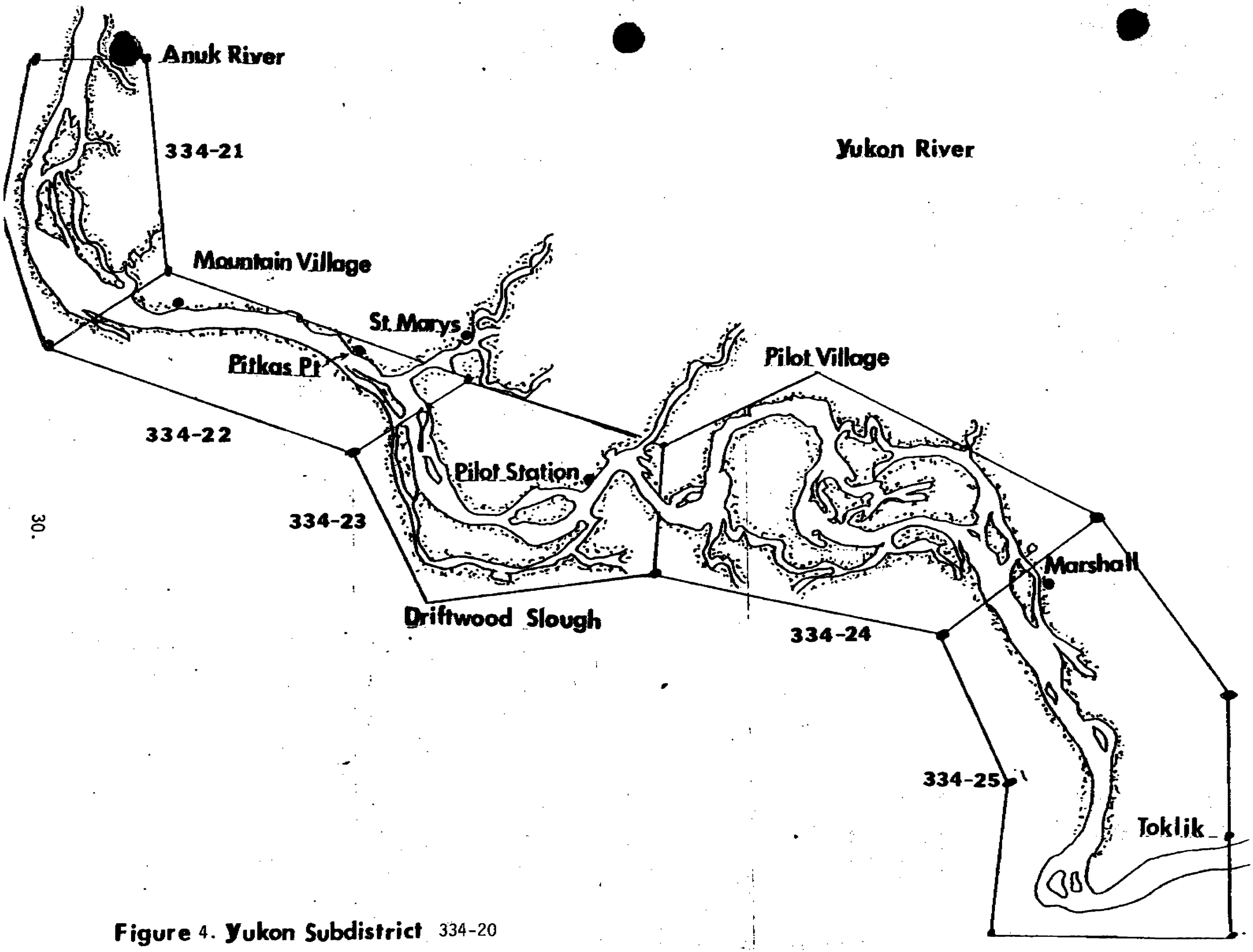


Figure 4. Yukon Subdistrict 334-20

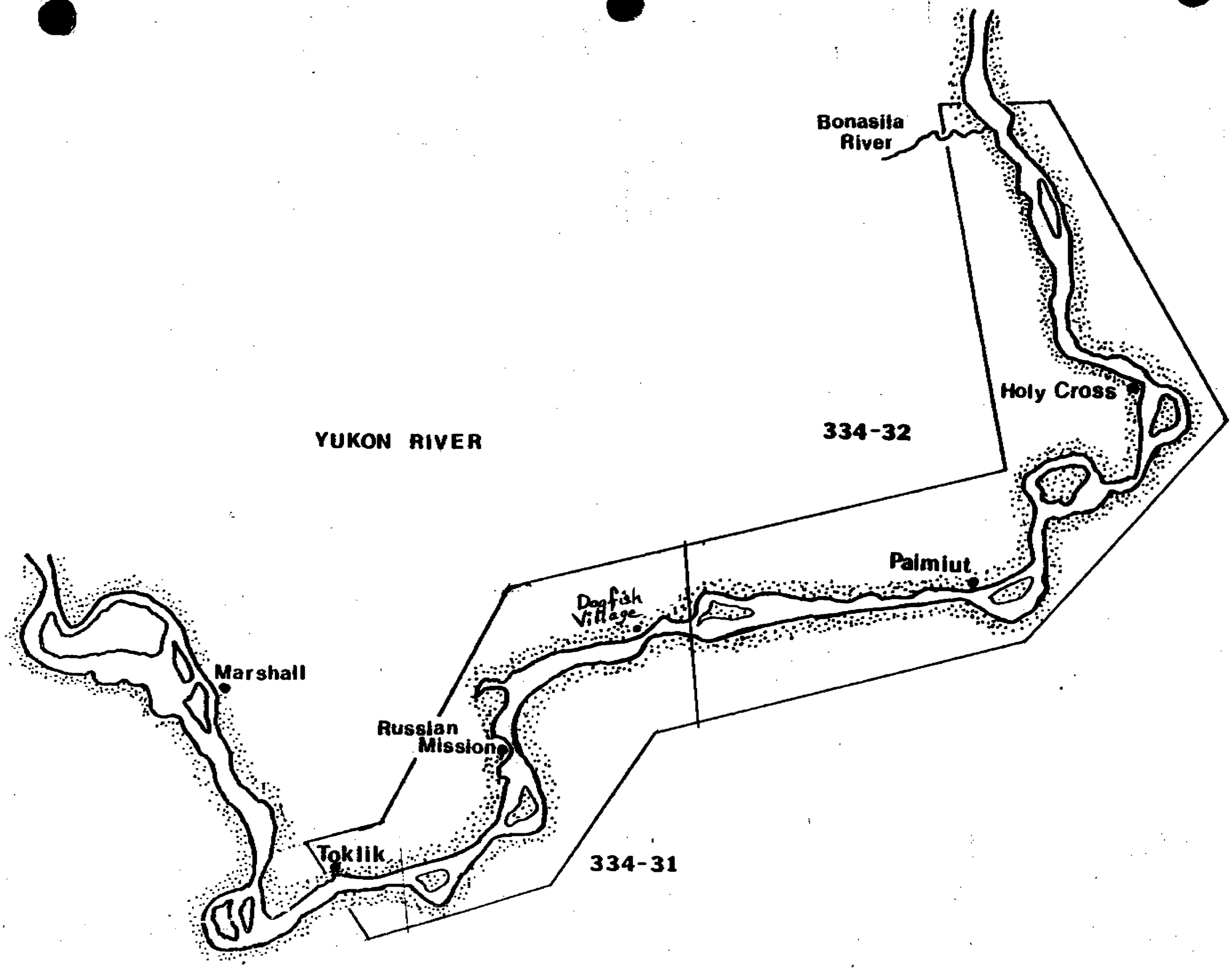
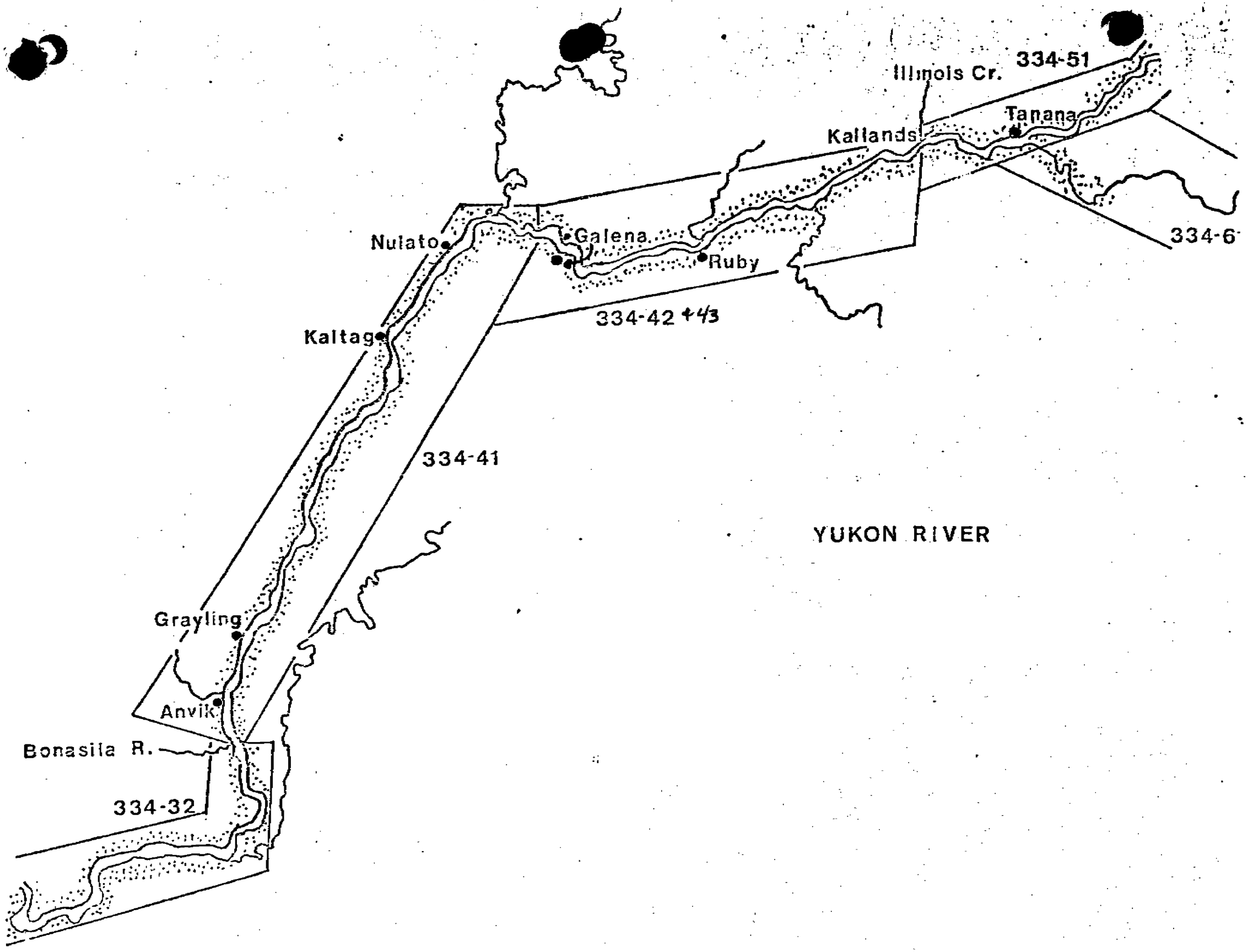


FIGURE 5. YUKON SUBDISTRICT 334-30-



YUKON RIVER

FIGURE 6. YUKON SUBDISTRICT 334-40

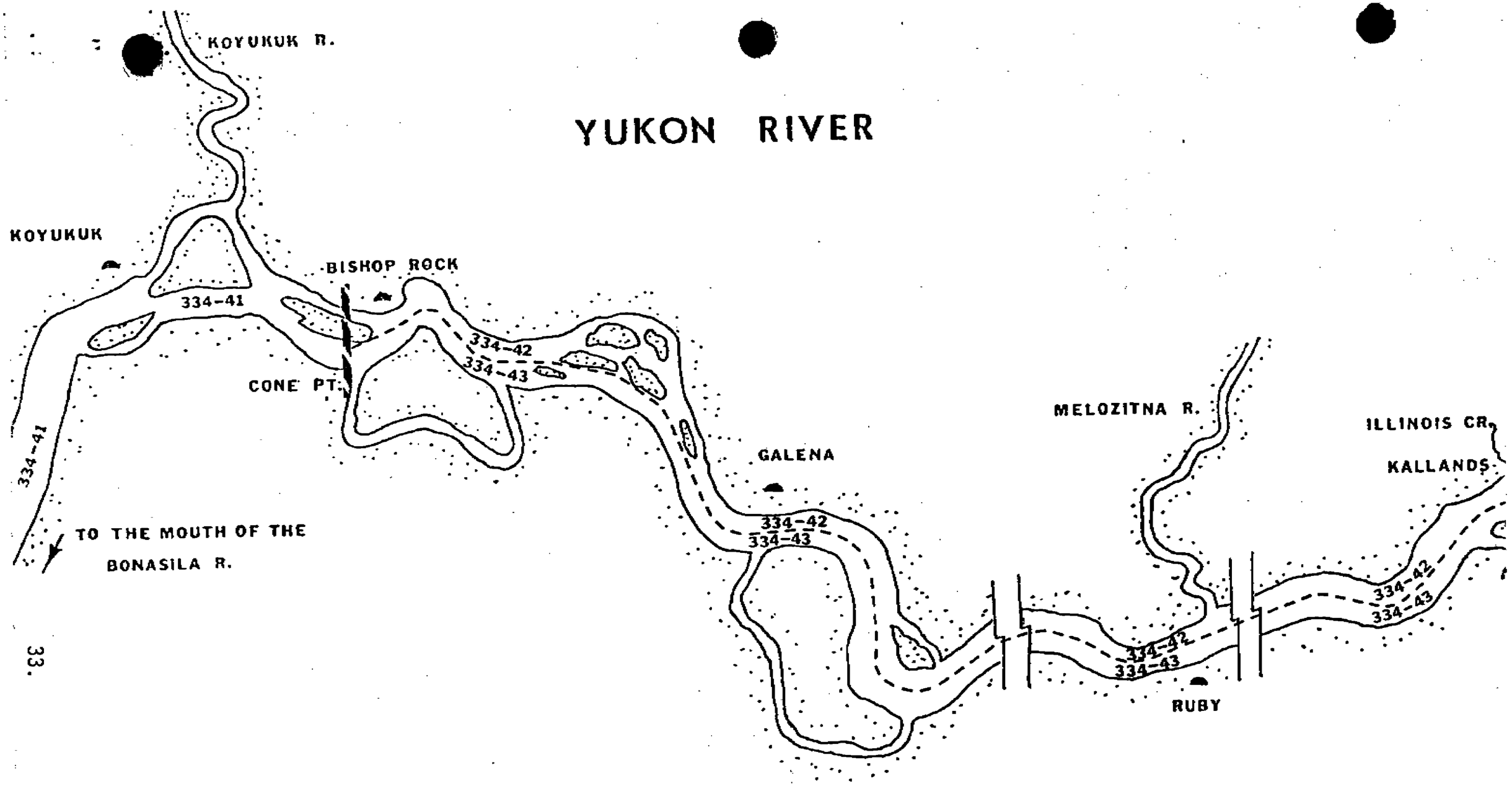


FIGURE 7. Yukon subdistrict 334-40

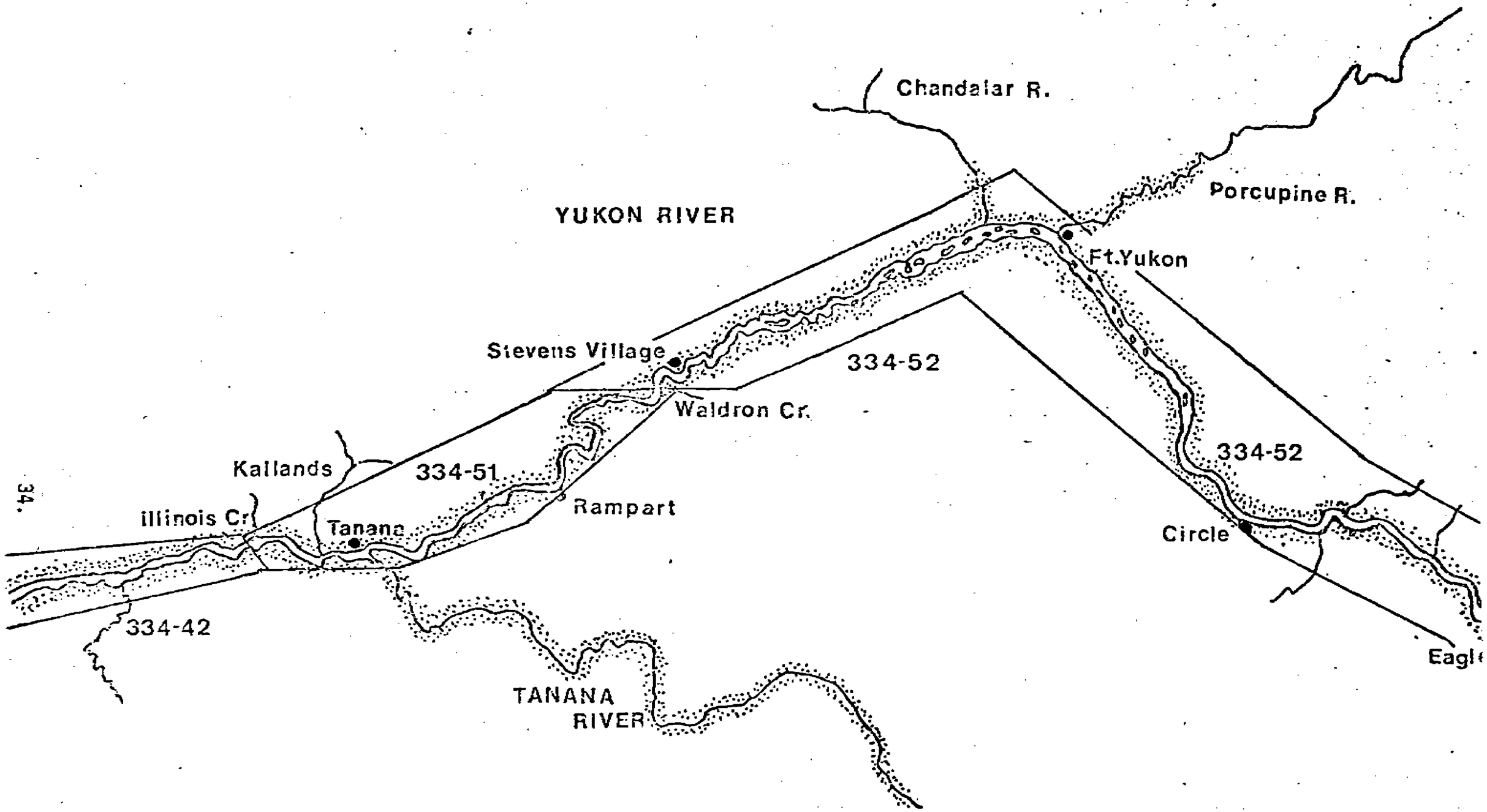


FIGURE 8 YUKON SUBDISTRICT 334-50

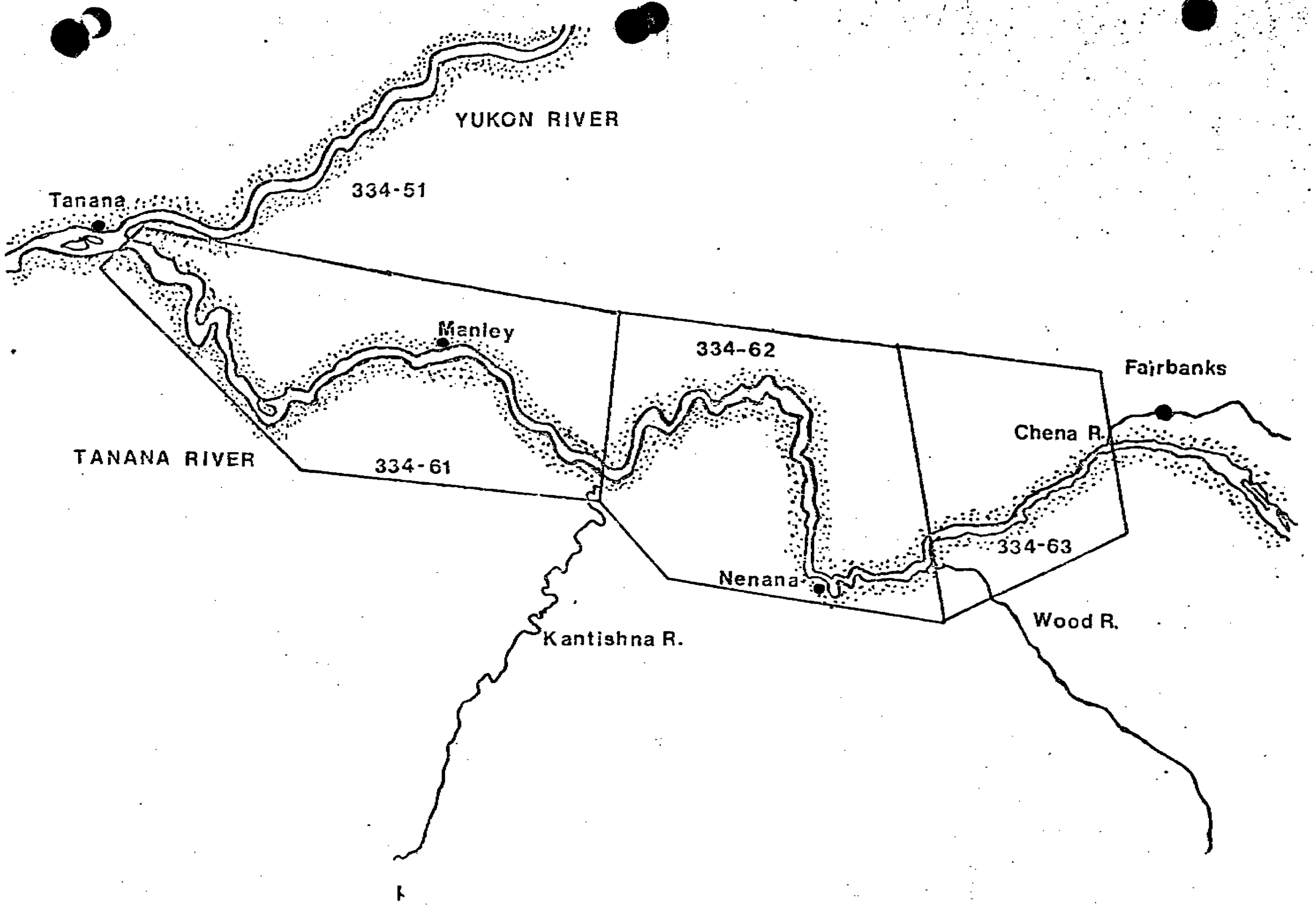


FIGURE 9. YUKON SUBDISTRICT 334-60

Table 1. List of indigenous fishes found in the Yukon area. 1/

Species Code	Scientific Name	Common Name
601	Lampetra japonica	Arctic lamprey
570	Stenodus leucichthys	Sheefish
581	Coregonus nasus	Broad Whitefish
582	Coregonus pidschian	Humpback Whitefish
583	Coregonus sardinella	Least Cisco
585	Coregonus laurettae	Bering Cisco
586	Prosopium cylindraceum	Round Whitefish
587	Prosopium coulteri	Pygmy Whitefish
610	Thymallus arcticus	Arctic Grayling
550	Salvelinus namaycush	Lake Trout
520	Salvelinus alpinus	Arctic Char
530	Salvelinus malma	Dolly Varden
410	Oncorhynchus tshawytscha	King Salmon
420	Oncorhynchus nerka	Red Salmon
430	Oncorhynchus kisutch	Coho Salmon
440	Oncorhynchus gorbuscha	Pink Salmon
450	Oncorhynchus keta	Chum Salmon
513	Osmerus mordax dentex	Rainbow Smelt
514	Hypomesus olidus	Pond Smelt
500	Esox lucius	Pike
630	Dallia pectoralis	Blackfish
650	Couesius plumbeus	Lake Chub
640	Catostomus catostomus	Longnose Sucker
670	Percopsis omiscomaycus	Trout-perch
590	Lota lota	Burbot, Lush
661	Pungitius pungitius	9-spine Stickleback
162	Cottus cognatus	Slimy Sculpin
	ESTUARINE	
113	Eleginus gracilis	Saffron Cod
121	Pleuronectes stellatus	Starry Flounder
122	Liopsetta glacialis	Arctic Flounder
230	Clupea pallasii	Pacific Herring
516	Mallotus villosus	Capelin

1/ Includes fishes found in the Yukon River drainage in Canada.

Table 2. Yukon River Drainage Mileages

Location	Mileages from Mouth
North Mouth (Apoon Pass)	
Kotlik	6
Hamilton	26
Middle Mouth (Kwikpak, Kawanak Pass)	
Choolunawick	16
Akers Camp	26
New Hamilton	34
South Mouth (Kwikluak Pass)	
Mouth, Black River	-18
Flat Island	0
Sheldons Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwikpak Pass (upstream mouth)	44
Head of Passes	48
Fish Village	52
Mouth Anuk River (Subdistrict 1/2 Boundary)	63
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atchuelinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough (Subdistrict 2/3 Boundary)	163
Ingrihak	170
Ohogamut	185
Kakamut	193
Russian Mission	213
Dogfish village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274

Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Mouth, Bonasila River (Subdistrict 3/4 Boundary)	306
Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna River)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186
Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands - Mouth of Illinois Creek (Subdistrict 4/5 Boundary)	664
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River (Subdistrict 5/6 Boundary)	695
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana River	850
Mouth, Bearpaw River	887
Outlet, Lake Minchumina	959

Minto	835
Nenana	860
Mouth, Nenana River	860
Mouth, Wood River	894
Rosie Creek Bluffs	912
Mouth, Chena River (Fairbanks)	920
Mouth, Salcha River	965
Benchmark #735 Slough	991
Mouth, Little Delta River	1,000
Mouth, Delta Creek	1,014
Mouth, Clear Creek (Richardson-Clearwater)	1,015
Mouth, Shaw Creek	1,021
Mouth, Delta River (Big Delta)	1,031
Delta Junction	1,041
Mouth, Goodpaster River	1,049
Bluff Cabin Slough	1,050
Outlet, Clearwater Lake	1,052
Mouth, Clearwater Creek, (Delta Clearwater)	1,053
Mouth, Gerstle River	1,059
Outlet, Healy Lake	1,071
Outlet, Lake George	1,086
Tanacross	1,128
Outlet, Tetlin Lake	1,188
Mouth, Nabesna River	1,210
Northway Junction	1,214
Mouth, Chisana River	1,215
Mouth, Sheep Creek	1,297
Rampart Rapids	731
Rampart	763
Mouth, Hess Creek	789
Mouth, Ray River	817
Highway Bridge - Pipeline Crossing	820
Mouth, Dall River	841
Stevens Village	847
Mouth, Hodzana River	897
Beaver	932
Mouth, Hadweenzic River	952
Mouth, Chandalar River (Venetie Landing)	982
Venetie	1,025
Fort Yukon	1,002
Mouth, Porcupine River	1,002
Mouth, Black River	1,026
Chalkyitsik	1,084
Mouth, Salmon River	1,142
Mouth, Salmon Trout River	1,193
Mouth, Sheenjek River	1,054
Mouth, Coleen River	1,157
U.S.-Canadian Border	1,219
Old Crow	1,259
Fishing Branch River spawning area	1,600
Circle	1,061
Woodchopper	1,110
Mouth, Charley River	1,124

Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian Border	1,224
Mouth Fortymile River	1,269
Dawson	1,319
Mouth, Klondike River	1,320
Mouth, Sixty Mile River	1,369
Mouth, Stewart River	1,375
McQuesten	1,455
Stewart Crossing	1,491
Mayo	1,520
Mouth, Hess River	1,594
Mouth, White River	1,386
Mouth, Donjek River	1,455
Mouth Kluane River	1,541
Outlet Kluane Lake	1,587
Burwash Landing	1,595
Kluane	1,625
Fort Selkirk	1,477
Mouth, Pelly River	1,478
Pelly Crossing	1,410
Mouth, MacMillan River	1,442
Ross River	1,602
Minto	1,499
Mouth, Tatchun Creek	1,530
Carmacks	1,547
Mouth, Little Salmon River	1,583
Mouth, Big Salmon River	1,621
Mouth, North Big Salmon River	1,641
Mouth, South Big Salmon River	1,657
Outlet, Big Salmon Lake	1,714
Mouth, Teslin River	1,654
Roaring Bull Rapids	1,707
Johnson's Crossing (Outlet, Teslin Lake)	1,756
Teslin	1,780
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mile Creek	1,851
Mouth, McNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Mouth, M'Clintock River	1,769
Outlet, Marsh Lake	1,764
Outlet, Little Atlin Lake	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross (Outlet Lake Bennett)	1,810
Bennett	1,835

Table 3. Yukon district processors and associated data, 1979.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Yukon Delta Fish Marketing Co-op, Inc. Emmonak, Alaska 99581 (Emmonak)	Frozen salmon Kings Cohos Chums Salmon Roe	1
Amukon Trading Post Scammon Bay, Alaska 99662 (Black River)	Hard salt Kings Chums	1
Bering Sea Fisheries, Inc. 4413 83rd Avenue S.E. Everett, Washington 98205 (Lamont Slough)	Frozen salmon & canned (#1 talls) Kings Cohos Chums Salmon Roe	1 & 2
Akers & Co., Inc. Chulooawick, Alaska 99587 via Emmonak, Alaska (Kwikpakak Slough)	Mild cured salmon Kings Chums Salmon Roe	1
Whitney Fidelgo Seafoods 4401 W. International Airport Rd. Anchorage, Alaska (Emmonak)	Fresh Salmon Kings Chums Cohos Salmon Roe	1
Schenk Seafood Sales, Inc. P. O. Box 984 Bellingham, Washington 98225 (Kwikluak Pass near Alakanuk)	Frozen salmon Kings Cohos Chums Salmon Roe	1

Table 3. Yukon district processors and associated data, 1979.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Trinity Seafoods Inc. 6550 Imlach Way Anchorage, AK 99502	Frozen Salmon Chums Kings Cohos	1 & 2
Azachorak Corp, DBA The Village Cannery Mountain Village, Alaska 99632 (Mt. Village)	Hard salt, frozen & canned (#1/2 flats) salmon Kings Chums Cohos	1 & 2
Boreal Fisheries 24320 - 70th Ave. East Graham, Washington 98338 (Old Andreafsky)	Fresh salmon Kings Chums Cohos	2
Maserculiq Fish Processors Fortuna Ledge, AK 99585 (Marshall)	Fresh salmon Kings Chums Cohos Salmon Roe	2 & 3
Harry Turner Box 97 Holy Cross, AK 99602 (Paimiut)	Smoked salmon strips Kings	3
K & A Fisheries Aniak, AK c/o Joe Parent Kalskag, AK 99607 (Russian Mission)	Fresh salmon Kings Chums Salmon Roe	3

Table 3. Yukon district processors and associated data, 1979.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Clark Fishing Enterprises Box 517 Aniak, AK (Ingrihak-Paimuit)	Fresh salmon Kings Chums Salmon Roe	3 & 4
Grayling Air Service Grayling, AK 99590 (Anvik-Grayling)	Fresh Salmon King Chum Salmon Roe	4
Huntington Fisheries Box 49 Galena, Alaska 99741 (Galena and Nulato)	Fresh Salmon King Chum Salmon Roe	4
Kallands Fisheries P.O. Box 51 Nenana, Alaska 99760 (Kallands)	Frozen Salmon King Chum Coho Canned Smoked Salmon	4
Quality Aircraft Box 4-1583 Anchorage, AK 99509 (Kaltag)	Fresh Salmon Chum Salmon Roe	4
The Walton Co. Anvik, AK. 99558 (Anvik)	Fresh Salmon King Chum Salmon Roe	4
Sterling Salmon, Inc Tanana, AK 99777 (Tanana, Nenana, Ruby)	Frozen Salmon Chum Salmon Roe	4, 5, & 6

Table 3. Yukon district processors and associated data, 1979.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Aurora Seafoods 1260 Aurora Dr. Fairbanks, AK 99701 (Fairbanks)	Frozen Salmon King Chum	5
Merril Trading Manley Hot Springs, AK 99756 (Rampart)	Fresh Salmon King Chum	5
Peter Merry Guide Service SRA Box 1707, Toteal Dr. Anchorage, AK 99507 (Rampart)	Fresh Salmon King Chum Salmon Roe	5
Turak J. Newman Rampart, AK 99767 (Rampart)	Fresh Salmon King Chum	5
N & W Fish Co. SR Box 20616 Fairbanks, AK 99701	Fresh Salmon Chum	5
Arctic Diving 1321 Karen Fairbanks, AK 99701 (Fairbanks and Yukon bridge)	Frozen Salmon King Chum Coho Salmon Roe	5 & 6
Interior Fisheries SRA Box 168 Anchorage, AK 99502 (Manley & Tanana)	Frozen Salmon King Chum Coho Salmon Roe	5 & 6

Table 3. Yukon district processors and associated data, 1979.

Commercial operator (Processing location/buying station)	Product	Subdistrict
Alaska Salmon Company, Inc. 1210 East 70th Ave Anchorage, AK 99502 (Fairbanks)	Frozen Salmon Chum Coho	6
Terry Clark Rt. 2, Parks Hwy Nenana, AK 99760 (Nenana)	Frozen Salmon King Chum Coho Salmon Roe	6
Catherine Ludecker SR Box 10392 Fairbanks, AK 99701 (Fairbanks)	Frozen Salmon King Chum	6
Nenana Reefer Box 26 Nenana, AK 99760 (Nenana)	Frozen Salmon King Chum Coho Salmon Roe	6
Stevens Fisheries Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon King Coho Chum Salmon Roe	6
Yutana Fish General Delivery Manley Hot Springs, AK 99756 (Manley)	Frozen Salmon Chum Coho	6

Table 4. Commercial salmon catches by species and subdistrict, Yukon district, 1979.

Subdistrict	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total of All Species
334-10						
King Salmon Season (6/4-6/22)	61,790	97,352	-	97,352	-	159,142
Fall or second season (6/25-8/14)	14,479	292,999	101,124	394,123	11,244	419,846
(Before Quota Period (6/25-7/15)	(14,089)	(280,610)	(4,107)	(284,717)	(8)	(298,814)
(After Quota Period 7/16-8/14)	(390)	(12,389)	(97,017)	(109,406)	(11,236)	(121,032)
Total 334-10	76,269	390,351	101,124	491,475	11,244	578,988
334-20						
King Salmon Season (6/3-6/21)	33,347	39,621	-	39,621	-	72,968
Fall or Second Season (6/24-8/13)	8,010	137,316	94,042	231,358	2,920	242,288
(Before Quota Period (6/24-7/18)	(7,880)	(137,316)	-	(137,316)	-	(146,196)
(After Quota Period 7/19-8/13)	(130)	-	(94,042)	(94,042)	(2,920)	(97,092)
Total 334-20	41,357	176,937	94,042	270,979	2,920	315,256
334-30						
King Salmon Season (6/11-6/15)	3,073	110	-	110	-	3,183
Fall or Second Season (6/25-8/15)	2,035	43,330	25,955	69,285	-	71,320
(Before Quota Period (6/25-7/21)	(2,017)	(43,330)	-	(43,330)	-	(45,347)
(After Quota Period (7/22-8/15)	(18)	-	(25,955)	(25,955)	-	(25,973)
Total 334-30	5,108	43,440	25,955	69,396	-	74,503
TOTAL LOWER YUKON	122,734	610,728	221,121	831,849	14,164	968,747
334-40						
King Salmon Season (6/15-8/15)	1,969	172,278	-	172,278	-	174,247
Fall Season (8/17-9/7)	0	0	50,375	50,375	155	50,530
Total 334-40	1,969	172,278	50,375	222,653	155	224,777
334-50						
King Salmon Season (6/15-7/12)	3,520	614	-	614	-	4,134
Fall Season (8/7-9/2)	-	-	56,668	56,668	-	56,668
Total 334-50	3,520	614	56,668	57,282	-	60,802
334-60						
King Season (6/15-8/15)	833	19,880	-	19,880	-	20,713
Fall Season (9/11-9/16)	-	-	34,316	34,316	2,791	37,107
Total 334-60	833	19,880	34,316	54,196	2,791	57,820
TOTAL UPPER YUKON	6,322	192,772	141,359	334,131	2,946	343,399
GRAND TOTAL YUKON AREA	129,056	803,500	362,480	1,165,980	17,110	1,312,146

Table 5. Yukon district commercial salmon catches by statistical area, 1979.

Statistical Area	King Salmon Season 1/ King	King Salmon Season 1/ Chum	Fall Season 2/ King	Fall Season 2/ Chum	Fall Season 2/ Coho	Total King	Total Chum	Total Coho
334-11	930	942	40	597	42	970	1,539	42
12	10,722	41,185	2,819	77,683	2,386	13,541	118,868	2,386
13	3,039	9,909	1,013	29,105	1,045	4,052	39,014	1,045
14	5,256	14,678	736	28,825	999	5,992	43,503	999
15	10,760	14,500	2,384	79,589	2,082	13,144	94,089	2,082
16	8,129	2,128	2,768	45,772	1,189	10,897	47,900	1,189
17	15,784	7,870	3,503	89,934	3,229	19,287	97,804	3,229
18	7,170	6,140	1,216	42,618	272	8,386	48,758	272
Subtotal 334-10	61,790	97,352	14,479	394,123	11,244	76,269	491,475	11,244
334-21	9,202	10,421	1,608	65,392	406	10,810	75,813	406
22	8,374	16,048	2,530	70,838	1,624	10,904	86,886	1,624
23	5,484	6,714	1,249	23,851	569	6,733	30,565	569
24	6,212	3,542	1,461	29,779	287	7,673	33,321	287
25	4,075	2,896	1,162	41,498	34	5,237	44,394	34
Subtotal 334-20	33,347	39,621	8,010	231,358	2,920	41,357	270,979	2,920
334-31	1,402	106	709	26,701	-	2,111	26,807	-
32	1,671	4	1,326	42,584	-	2,997	42,588	-
Subtotal 334-30	3,073	110	2,035	69,285	-	5,108	69,395	-
TOTAL LOWER YUKON	98,210	137,083	24,524	694,766	14,164	122,734	831,849	14,164
334-41	791	138,443	0	0	0	791	138,443	0
42	344	29,789	0	28,618	155	344	58,407	155
43	834	4,046	0	21,757	0	834	25,803	0
Subtotal 334-40	1,969	172,278	0	50,375	155	1,969	222,653	155
334-51	3,455	614	0	55,833	0	3,455	56,447	0
52	65	0	0	835	0	65	835	0
Subtotal 334-50	3,520	614	0	56,668	0	3,520	57,282	0
334-61	101	338	0	7,398	465	101	7,736	465
62	362	14,810	0	21,461	2,059	362	36,271	2,059
63	370	4,406	0	5,457	267	370	9,863	267
Subtotal 334-60	833	19,880 3/	0	34,316	2,791	833	54,196	2,791
Total Upper Yukon	6,322	192,772	0	141,359	2,946	6,322	334,131	2,946
Grand Total Yukon Area	104,532	329,855	24,524	836,125	17,110	129,056	1,165,980	17,110

1/ King Salmon Season

334-10 6/4-6/22
334-20 6/3-6/21
334-30 6/11-6/15
334-40 6/15-8/15
334-50 6/15-7/12
334-60 6/15-8/15

2/ Fall Season

334-10 6/25-8/14
334-20 6/24-8/13
334-30 6/25 8/15
334-40 8/17 9/7
334-50 8/7-9/2
334-60 9/11-9/16

3/ Includes 326 chums taken in unspecified statistical area.

Table 6. Yukon district Commercial Fisheries Entry Commission permits issued by residence, 1979

Subdistrict	Residence	Gillnet Permits	Fishwheel Permits
334-10, 334-20 and 334-30	Emmonak	113	
	Mountain Village	112	
	Alakanuk	95	
	Kotlik	81	
	St. Marys	63	
	Marshall	51	
	Pilot Station	48	
	Scammon Bay	40	
	Russian Mission	23	
	Sheldons Point	22	
	Holy Cross	14	
	Unalakleet	14	
	Pitkas Point	11	
	Anchorage	11	
	Stebbins	8	
	Shaktoolik	3	
	Bethel	3	
	Everett, Wa	2	
	Chuloonawick	1	
	Delta Junction	1	
	Eagle River	1	
	Hooper Bay	1	
	Nome	1	
	Palmer	1	
	Paxson	1	
	Puyallup, Wa	1	
	Sitka	1	
	St. Michaels	1	
	Tacoma, Wa	1	
	Wasilla	1	
Subtotal Lower Yukon		726	0
334-40	Anvik	3	5
	Grayling	4	8
	Kaltag	3	11
	Nulato	0	15
	Koyukuk	0	3
	Galena	5	22
	Ruby	4	13
	Other	4	6
Subtotal		18	83
334-50	Tanana	13	21
	Rampart	4	5
	Stevens	3	2
	Fairbanks	9	3
	Fort Yukon	0	1
	Circle	0	1
	Eagle	2	1
	Other	6	6
Subtotal		37	40
334-60	Manley	2	6
	Nenana	4	23
	Fairbanks	2	9
	Other	1	5
Subtotal		9	43
Subtotal Upper Yukon		64	166
Total Yukon District		790	166

Table 7 Commercial salmon catches from subdistrict 334-10, Yukon District drift and set gill nets combined, 1979.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hr.) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/4	6		840		23	840		23
6/5	18		5,263		526	6,102 (.81)		549 (.07)
	24	319	6,103 (.81)		549 (.07)			
6/7	6		1,020		184	7,123		733
6/8	18		3,883		404	11,006 (.71)		1,137 (.07)
	24	332	4,903 (.61)		550 (.07)			
6/11	6		4,046		3,236	15,052		4,373
6/12	18		15,464		17,548	30,516 (1.26)		21,921 (.90)
	24	367	19,510 (2.22)		20,784 (1.07)			
6/14	6		929		1,042	31,445		22,963
6/15	24		6,418		14,464	37,863		37,427
6/16	6		1,921		5,163	39,784 (1.08)		42,590 (1.15)
	36	354	9,268 (.73)		20,669 (1.62)			
6/18	6		2,620		6,837	42,404		49,427
6/19	18		14,089		39,952	66,493 (1.23)		89,379 (1.65)
	24	371	16,709 (1.88)		46,789 (5.26)			
6/21	6		1,650		2,286	68,143		91,665
6/22	18		3,647		5,687	61,790 (1.17)		97,352 (1.84)
	24	286	5,297 (.75)		7,973 (1.12)			
Subtotal 1/	156	426	61,790 (1.17)		97,352 (1.84)			
6/25	6		1,564		27,470	1,564		27,470
6/26	18		4,388		66,692	6,945 (.70)		94,162 (11.09)
	24	353	5,945 (.70)		94,162 (11.09)			
6/28	6		1,094		16,882	7,036		111,044
6/29	18		3,135		32,899	10,171 (.63)		143,943 (8.99)
	24	321	4,229 (.55)		49,781 (6.46)			
7/2	6		496		12,763	10,666		156,686
7/3	18		986	3	28,621	11,651 (.48)	3 (+)	185,317 (7.66)
	24	336	1,480 (.18)	3 (+)	41,374 (5.15)			
7/5	6		236		7,202	11,887	3	192,619
7/6	24		1,009		36,425	12,896	3	228,044
7/7	6		384		17,886	13,280 (.36)	3 (+)	246,830 (6.77)
	36	339	1,629 (.13)		61,513 (6.03)			
7/9	6		105	1	3,943	13,385	4	250,773
7/10	18		371	3	15,502	13,756 (.31)	7 (+)	266,275 (6.14)
	24	287	476 (.06)	4 (+)	19,445 (2.82)			
7/12	6		108		5,223	13,864	7	271,498
7/13	24		180	1	10,886	14,044	8	282,384
7/14	6		45	-	2,363	14,089 (.26)	8 (+)	284,717 (5.30)
	36	287	333 (.03)	1 (+)	18,442 (1.78)			
7/16	6		10		316	14,099	8	285,033
7/17	18		126	5	7,690	14,225 (.24)	13 (+)	292,723 (5.03)
	24	187	136 (.03)	5 (+)	8,006 (1.78)			
7/19	6		18		2,576	14,243	13	296,299
7/20	18		41	2	3,422	14,284 (.22)	16 (+)	298,771 (4.77)
	24	186	59 (.01)	7 (+)	6,098 (1.36)			
7/23	6		2	5	1,884	14,286	20	300,625
7/24	18		42	27	5,357	14,328 (.21)	47 (+)	305,982 (4.48)
	24	234	44 (.01)	32 (.01)	7,211 (1.28)			
7/26	6		9	29	6,122	14,337	76	312,104
7/27	18		32	151	8,697	14,369 (.19)	227 (+)	320,801 (4.27)
	24	265	41 (.01)	180 (.02)	14,819 (2.16)			
7/30	6		6	134	2,882	14,376	361	323,783
7/31	18		33	842	6,729	14,488 (.17)	903 (.01)	330,512 (4.08)
	24	267	39 (.01)	976 (.10)	9,711 (1.61)			
8/2	6		5	382	2,391	14,413	1,195	332,903
8/3	18		25	1,018	14,921	14,438 (.16)	2,213 (.03)	347,824 (3.93)
	24	297	30 (+)	1,310 (.18)	17,312 (2.48)			
8/6	6		11	798	11,029	14,449	3,011	358,963
8/7	18		18 (+)	3,033	26,834	14,467 (.15)	6,044 (.08)	385,797 (4.01)
	24	324	29 (+)	3,831 (.49)	37,863 (4.87)			
8/9	6		5	180	193	14,492	6,224	385,990
8/10	18		4	1,032	1,043	14,496 (.14)	7,266 (.09)	387,033 (3.98)
	24	144	9 (+)	1,212 (.35)	1,236 (.35)			
8/13	6		1	1,316	2,116	14,497	8,872	389,149
8/14	18		2	2,677	4,974	14,498 (.14)	11,944 (.13)	394,123 (3.74)
	24	243	3 (+)	3,993 (.68)	7,090 (1.21)			
Subtotal 2/	3[illegible]	468	14,498 (.14)	11,944 (.13)	394,123 (3.74)			
Grand Total	540	461	76,288	11,944	491,475			

109,906 Fall Chum

1/ King Salmon season (6/4-6/22)

2/ Fall season (6/25-8/14)

Table 8. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1979.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/3	6		129		21	129		21
6/4	18		1,432		50	1,561 (.56)		71 (.03)
	24	118	1,561 (.56)		71 (.03)			
6/6	6		209		9	1,770		80
6/7	19		1,155		59	2,925 (.48)		139 (.02)
	24	138	1,364 (.41)		68 (.02)			
6/10	6		414		7	3,339		146
6/11	18		4,735		773	8,074 (.84)		919 (.10)
	24	144	5,149 (1.49)		780 (.23)			
6/13	6		2,779		1,959	10,853		2,878
6/14	24		7,821		5,404	18,674		8,282
6/15	12		3,576		4,573	22,250 (1.39)		12,855 (.80)
	36	178	14,176 (2.21)		11,936 (1.86)			
6/17	6		1,146		1,570	23,396		14,425
6/18	18		2,783		5,716	26,178 (1.32)		20,141 (1.02)
	24	158	3,928 (1.04)		7,286 (1.92)			
6/20	6		1,143		1,936	27,321		22,077
6/21	18		6,026		17,644	33,347 (1.40)		39,721 (1.66)
	24	171	7,169 (1.76)		19,480 (4.75)			
Subtotal 1/	156	210	33,347 (1.40)		39,621 (1.66)			
6/24	6		339		3,872	339		3,872
6/25	18		1,616		17,452	1,955 (.72)		21,324 (7.89)
	24	113	1,955 (.72)		21,324 (7.89)			
6/27	6		459		9,278	2,414		30,602
6/28	18		2,151		44,835	4,565 (.69)		75,437 (11.42)
	24	162	2,610 (.67)		54,113 (13.91)			
7/1	6		330		6,764	4,896		81,201
7/2	18		1,492		19,907	6,387 (.62)		101,108 (9.84)
	24	153	1,822 (.50)		26,671 (6.99)			
7/4	6		132		3,046	6,519		104,154
7/5	24		401		6,837	6,920		110,691
7/6	6		318		4,516	7,238 (.53)		115,207 (8.37)
	36	97	851 (.24)		14,099 (4.04)			
7/8	6		31		1,889	7,269		117,096
7/9	18		375		10,919	7,644 (.45)		128,015 (7.64)
	24	124	406 (.13)		12,808 (4.30)			
7/11	6		24		1,496	7,668		129,510
7/12	24		126		4,071	7,794		133,581
7/13	6		32		1,899	7,826 (.37)		135,280 (6.49)
	36	114	182 (.04)		7,266 (1.77)			
7/15	6		16		336	7,842		135,616
7/16	18		31		1,191	7,873 (.35)		136,807 (6.24)
	24	45	47 (.04)		1,527 (1.41)			
7/18	6		7		509	7,880		137,316
7/19	18		31		4,149	7,911 (.33)		141,465 (5.96)
	24	74	38 (.02)		4,658 (2.62)			
7/22	6		18		1,147	7,929		142,612
7/23	18		8		1,225	7,937 (.31)		143,837 (5.78)
	24	48	26 (.02)		2,372 (2.05)			
7/25	6		4		929	7,941		144,766
7/26	18		16		5,971	7,967 (.29)		150,737 (5.56)
	24	94	20 (.01)		6,900 (3.06)			
7/29	6		1	2	2,689	7,958	2	153,426
7/30	18		20	12	10,362	7,978 (.28)	14 (+)	163,788 (5.39)
	24	136	21 (.01)	14 (+)	13,051 (3.99)			
8/1	6		3	12	2,156	7,981	26	165,944
8/2	18		11	49	6,927	7,992 (.24)	75 (.01)	172,871 (5.19)
	24	122	14 (+)	61 (.02)	9,083 (3.10)			
8/5	6		2	18	4,244	7,994	93	177,115
8/6	18		6	290	27,815	8,000 (.21)	383 (.04)	204,930 (5.52)
	24	157	8 (+)	308 (.08)	32,059 (8.50)			
8/8	6			478	10,072	8,000	861	215,002
8/9	18		7	1,413	14,298	8,007 (.19)	2,274 (.17)	229,300 (5.66)
	24	142	7 (+)	1,891 (.58)	24,370 (7.15)			
8/12	6			67	368	8,007	2,341	229,668
8/13	18		3	579	1,690	8,010 (.19)	2,920 (.19)	231,358 (5.45)
	24	80	3 (+)	646 (.33)	2,058 (1.07)			
Subtotal 2/	384	220	8,010 (.19)	2,920 (.19)	231,358 (5.45)			
Grand Total	540	230	41,357	2,920	270,979			

94,551 Fall Chum

1/ King salmon season (6/3-6/21)

2/ Fall season (6/24-8/13)

Table 9. Commercial salmon catches from subdistrict 334-30, Yukon district, drift and set gill nets combined, 1979.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hr.) King	Coho	Chum	Cumulative catch (cum. catch/boat hr.) King	Coho	Chum
6/11	6		161			161		
6/12	24		443		3	604		3
6/13	18		869		16	1,483 (1.61)		19 (.02)
	48	20	1,483 (1.51)		19 (.02)			
6/14	6		627		14	1,980		33
6/15	18		1,093		77	3,073 (2.10)		110 (.08)
	24	21	1,620 (3.21)		91 (.18)			
Subtotal 1/	72	22	3,073 (2.10)		110 (.08)			
6/25	6		142		1,165	142		1,165
6/26	24		302		4,956	444		6,121
6/27	6		190		2,182	634 (.93)		8,303 (12.14)
	36	19	634 (.93)		8,303 (12.14)			
6/28	6		132		1,424	766		9,727
6/29	24		364		4,929	1,130		14,656
6/30	6		92		1,963	1,222 (.84)		16,619 (11.54)
	36	21	588 (.78)		8,316 (11.00)			
7/2	6		94		4,626	1,316		21,245
7/3	24		256		7,485	1,571		28,730
7/4	6		107		3,491	1,678 (.76)		32,221 (14.67)
	36	21	456 (.60)		15,602 (20.64)			
7/5	6							
7/6	24		39		489	1,717		32,710
7/7	6		103		1,915	1,820 (.83)		34,625 (15.02)
	36	3	142 (1.31)		2,404 (22.25)			
7/9	6					1,820		34,625
7/10	24		67		2,492	1,887		37,117
7/11	6		51		1,298	1,938 (.68)		38,416 (13.01)
	36	18	118 (0.18)		3,790 (5.84)			
7/12	6		20		1,363	1,966		39,778
7/13	24		3		366	1,961		40,144
7/14	6		41		1,866	2,002 (.58)		42,010 (11.67)
	36	18	64 (0.09)		3,595 (5.55)			
7/16	6		1		160	2,003		42,170
7/17	24		4		489	2,007		42,659
7/18	6		10		671	2,017 (.50)		43,330 (10.60)
	36	17	15 (0.02)		1,320 (2.16)			
7/23	6					2,017		43,330
7/24	24		3		1,468	2,020		44,798
7/25	6		7		535	2,027 (.43)		45,333 (9.67)
	36	16	10 (0.02)		2,003 (3.48)			
7/26	6				37	2,027		45,370
7/27	24		3		429	2,030		45,799
7/28	6					2,030 (.40)		45,799 (9.03)
	36	11	3 (0.01)		466 (1.18)			
7/30	6					2,030		45,799
7/31	24				2,102	2,030		47,901
8/1	6		1		512	2,031 (.36)		48,413 (8.63)
	36	15	1 (+)		2,614 (4.84)			
8/2	6				728	2,031		49,141
8/3	24				1,623	2,031		50,764
8/4	6		2		329	2,033 (.33)		51,093 (8.09)
	36	20	2 (+)		2,680 (3.72)			
8/6	6				216	2,033		51,309
8/7	24				678	2,033		51,987
8/8	6		2		552	2,035 (.30)		52,539 (7.71)
	36	14	2 (+)		1,446 (2.87)			
8/9	6				840	2,035		53,379
8/10	24				6,642	2,039		60,021
8/11	6				4,326	2,036 (.27)		64,347 (8.33)
	36	25			11,808 (13.12)			
8/13	6					2,036		64,347
8/14	24				2,471	2,038		66,818
8/15	6				2,467	2,035 (.24)		69,285 (8.12)
	36	18			4,938 (7.62)			
Subtotal 2/	504	32	2,036 (0.24)		69,285 (3.12)			
Grand Total	576	33	5,108		69,395			

25,155 Fall Chum

1/ King salmon season (6/11-6/15)

2/ Fall season (6/25-8/15)

Table 10. Commercial salmon catches, Subdistrict 334-40, Yukon district, set gill nets and fishwheel catches combined, 1979.

Period ending	Fishermen	King	Chum	Coho
6/22	16	91	10,238	-
6/29	62	482	58,617	-
7/6	77	659	39,486	-
7/13	74	679	44,032	-
7/20	44	56	9,704	-
7/27	29	2	3,475	-
8/3	14	0	1,476	-
8/10	17	0	2,427	-
8/15	23	0	2,823	-
Subtotals 1/	87	1,969	172,278	-
8/17	23	-	2,115	-
8/24	25	-	14,770	-
8/31	25	-	10,999	45
9/7	27	-	22,491	110
Subtotals 2/	31	-	50,375	155
Total	90	1,969	222,653	155

1/ King season 6/15-8/15
2/ Fall season 8/16-9/7

Table 11. Commercial salmon catches, Subdistrict 334-50, Yukon district, set gill nets and fishwheel catches combined, 1979.

Period ending	Fishermen	King	Chum	Coho
6/24	15	228	-	-
7/1	26	1,276	43	-
7/8	28	1,517	404	-
7/12	26	499	167	-
Subtotals 1/	34	3,520	614	-
7/22	-	Season Closed		-
7/29	-	Season Closed		-
8/5	-	Season Closed		-
8/12	28	-	5,507	-
8/19	33	-	15,405	-
8/26	38	-	18,177	-
9/2	38	-	17,579	-
Subtotals 2/	44	0	56,668	-
Total	49	3,520	57,282	-

1/ King salmon season 6/15-7/12

2/ Fall season 8/7-9/2

Table 12. Commercial salmon catches, Subdistrict 334-60, Yukon district, set gill nets and fishwheel catches combined, 1979.

Period ending	Fishermen	King	Chum	Coho
6/21	2	6	-	-
7/4	5	50	-	-
7/11	9	180	309	-
7/18	20	377	2,987	-
7/25	24	204	5,629	-
8/1	20	9	6,255	-
8/8	19	-	3,163	-
8/15	11	-	1,537	-
Subtotals 1/	30	833 3/	19,880	
9/12	31	-	12,653	734
9/16	32	-	21,663	2,029
Subtotal 2/	37		34,316	2,791 4/
Total	40	833	54,196	2,791

1/ King salmon season 6/15-8/15
2/ Fall season 9/10-9/16
3/ Total includes 7 kings taken on unknown date.
4/ Total includes 28 cohos taken on unknown date.

Table 13. Yukon River subsistence salmon catch data, 1979 (includes Canadian catch).[1/]

Village	Survey Date	Fishing Families	Dogs[2/]	Snow Machines[2/]	Kings	Summer Chums[3/]	Fall Chums	Coho	Subtotal Chums & Coho	Total Salmon	Whitefish/ Sheefish	8½" Nets	6" Nets	Fishwheels
Sheldons Pt.	8/22	12	27	15	91	610	1,072	495	2,177	2,268	30/0	10	20	0
Alakanuk	8/24	76	159	121	893	4,615	5,841	796	11,252	12,145	476/854	58	101	0
Emmonak	8/25	71	150	128	1,362	6,084	5,182	1,368	12,634	13,996	543/139	41	79	0
Kotlik	8/23	37	116	67	533	4,835	3,693	525	9,053	9,586	0/18	14	37	0
Subtotal		196	452	331	2,879	16,144	15,788	3,184	35,116	37,995	1,049/1,011	123	237	0
Mt. Village	8/29	54	93	92	1,025	8,043	5,144	117	13,304	14,329	171/133	89	92	0
Pitka's Pt.		14	64	12	390	2,131	1,197	150	3,478	3,868	257/179	13	16	0
St. Mary's	8/29	41	102	47	1,328	6,167	2,332	298	8,797	10,125	486/307	46	57	0
Pilot Station	8/24	49	97	63	804	3,193	2,949	347	6,489	7,293	2,887/468	51	56	0
Marshall	8/25	33	168	44	721	3,742	3,040	220	7,002	7,723	500/327	13	16	0
Subtotal		191	524	258	4,268	23,276	14,662	1,132	39,070	43,338	4,301/1,414	212	237	0
Russian Mission	8/26	18	54	23	1,476	913	1,002	12	1,927	3,403	74/173	25	19	0
Holy Cross	8/29	19	58	22	1,787	2,033	1,441	0	3,474	5,261	68/74	29	25	0
Subtotal		37	112	45	3,263	2,946	2,443	12	5,401	8,664	142/247	54	44	0
Subtotal Lower Yukon		424	1,088	634	10,410	42,366	32,893	4,328	79,587	89,997	5,492/2,672	389	518	0
Anvik	8/28	17	127	18	261	12,714	2,203	33	14,950	15,211	634/115	4	14	6
Grayling	8/28	21	182	23	391	18,418	2,199	13	20,630	21,021	983/275	6	16	14
Kaltag	4/	24	271	26	435	22,928	8,454	42	31,424	31,859	1,256/527	4	20	16
Nulato	9/15	30	273	38	1,245	6,054	5,280	2	11,336	12,581	588/375	22	26	16
Koyukuk	9/7	11	112	9	495	5,570	4,515	48	10,133	10,628	395/541	8	11	3
Galena	9/8	28	163	46	1,591	4,218	2,597	0	6,815	8,406	2,728/184	15	18	14
Ruby	9/10	14	233	22	2,221	8,305	8,367	59	16,731	18,952	1,576/434	2	8	12
Subtotal		145	1,311	182	6,639	78,207	33,615	197	112,019	118,658	8,160/2,451	61	113	81

Table 13. Yukon River subsistence salmon catch data, 1979 (includes Canadian catch) [1]. (Continued)

Village	Survey Date	Fishing Families	Dogs[2]	Snow Machines[2]	Kings	Summer Chums[3]	Fall Chums	Coho	Subtotal Chums & Coho	Total Salmon	Whitefish/ Sheefish	8½" Nets	6" Nets	Fishwheels
Tanana	9/17	36	409	41	1,604	5,964	32,842	412	39,218	40,822	7,482/1,038	28	10	30
Rampart	[4]	14	178	18	1,820	15,300	9,710	0	25,010	26,830	280/460	19	11	9
Fbks Fish Camp[5]	[4]	34			899	1,202	7,031	39	8,272	9,171	2,378/131	12	37	7
Stevens Village	11/5	12	74	9	1,295	16	4,125	0	4,141	5,436	194/19	10	3	5
Beaver	10/10	7	21	11	394	34	1,792	0	1,826	2,220	198/81	3	7	0
Ft. Yukon	10/10	33	261	37	1,922	749	21,487	30	22,266	24,188	851/132	4	12	17
Circle	10/10	17	109	18	1,175	433	3,108	0	3,541	4,716	0/13	9	9	6
Eagle	10/11	58	201	75	2,888	180	26,754	114	27,048	29,936	368/472	45	50	10
Subtotal		211	1,253	209	11,997	23,878	106,849	595	131,322	143,319	11,751/2,346	130	139	84
Main River Totals		780	3,652	1,025	29,046	144,451	173,357	5,120	322,928	351,974	25,403/7,469	580	770	165
Huslia	[4]	25	200	37	146	19,805	1,950	0	21,755	21,901	7,254/446	6	8	0
Hughes	[4]	12	153	12	180	11,664	1,201	0	12,865	13,045	9,990/730	9	18	0
Alatna	[4]	2	20	2	2	58	46	0	104	106	58/2	0	4	0
Allakaket	[4]	22	258	22	236	7,421	1,084	0	8,505	8,741	5,286/1,230	5	29	0
Koyukuk River Totals		61	631	73	564	38,948	4,281	0	43,229	43,793	22,588/2,408	20	59	0
Shageluk	9/8	16	114	18	62	6,585	0	62	6,647	6,709	4,737/148	0	28	0
Innoko River Totals		16	114	18	62	6,585	0	62	6,647	6,709	4,737/148	0	28	0
Venetie	10/10	8	51	8	0	0	3,943	0	3,943	3,943	0/0	0	8	0
Chandalar River Totals		8	51	8	0	0	3,943	0	3,943	3,943	0/0	0	8	0

Table 13. Yukon River subsistence salmon catch data, 1979 (includes Canadian catch). 1/ (continued)

Village	Survey Date	Fishing Families	Dogs 2/	Snow Machines 2/	Kings	Summer Chums 3/	Fall Chums	Coho	Subtotal Chums & Coho	Total Salmon	Whitefish/ Sheefish	8½" Nets	6" Nets	Fishwheels
Manley	9/20	18	297	5	269	1,939	18,855	1,419	22,213	22,482	48/100	3	11	6
Nenana	10/16	23	302	13	800	1,880	29,430	2,215	33,525	34,325	901/26	2	8	23 7/
Fairbanks 6/	4/	199	--	--	264	2,384	3,481	978	6,843	7,107	57/12	42	168	46 7/
Tanana River Totals		240	599	18	1,333	6,203	51,766	4,612	62,581	63,914	1,006/137	47	187	36 7/
Upper Yukon Totals		681	3,959	1,142	20,595	153,821	200,453	5,466	359,741	380,336	48,242/7,490	258	534	201
Yukon Territory Villages 8/														
Old Crow							11,000	0	11,000	11,000				
Porcupine River Totals							11,000	0	11,000	11,000				
Dawson 9/					1,200	--	2,000	0	2,000	3,200	--	--	--	--
Carmacks 10/					3,000	--	--	--	--	3,000	--	--	--	--
Y. T. Villages Total					4,200	--	13,000	--	13,000	17,200	--	--	--	--
Grand Total Yukon River					35,205	196,187	246,347	9,794	452,328	487,533	53,734/10,162	647	1,052	201

1/ Catch figures expanded 1/80.
2/ Data from fishing families only.
3/ Includes small numbers of pinks in subdistricts 1-3.
4/ Survey conducted via mail Nov.-Jan.
5/ Fishermen from Fairbanks who obtained permits and fished between Hess Creek and Dall River.
6/ From catch reports turned in by permittees fishing in the Tanana River between Wood River and the Salcha River.
7/ Actual number of wheels in Fairbanks area - 7.
8/ Data from Environment Canada-Fisheries Service (Whitehorse).
9/ Combined with Pelly and Stewart River, breakdown not available.
10/ Includes Teslin catches, breakdown not available.

Table 14. Aerial survey salmon escapement estimates. 1/ Yukon River drainage, 1979.

Stream (drainage)	Date	Survey Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
Atchuelinguk (Mt. Village) R.	7/18	Poor	13	-	961	-	10
Andreafsky River							
West Fork	7/18	Poor-Fair	1,134	-	43,391	-	2,100
East Fork	7/16	Fair	1,180	-	66,471	-	-
			2,314	-	109,862	-	2,100
Anvik River drainage							
Upper drainage above tower	7/16	Good	(641)	-	(84,620)	-	-
Tower count	7/1-7/21		1,237	-	(37,467)	-	97
Lower drainage below tower							
Main River (tower to Beaver Creek) 3/	7/20		90	-	-	-	-
Main River	7/16 & 21	Poor-Fair	(29)	-	(25,610)	-	-
Yellow River	7/22	Poor	139	-	(7,970)	-	-
Beaver River	7/21	Poor	8	-	(8,375)	-	-
Sonar count	6/23-7/23		-	-	277,712	-	-
Below sonar site	7/22	Poor	-	-	2,825	-	-
Total Anvik River drainage			1,474	-	288,537	-	97
Khiato River (main stem)	7/16	Good	13	-	2,838	-	-
North Fork	7/16	Good	1,080	-	33,083	-	-
South Fork	7/16	Good	414	-	1,806	-	-
			1,507	-	37,104	-	-
Koyukuk River drainage							
Gisasa River	7/17	Fair	484	-	10,982	-	-
Nogatza River							
Clear Creek	7/17	Good	-	-	5,132	-	-
Caribou Creek	7/17	Good	2	-	9,089	-	-
			2	-	14,221	-	-
Total Koyukuk R. drainage			486	-	25,183	-	-
Melozitna River drainage							
Big Creek 3/ 7/	7/20	-	-	-	4	-	-
Fox Creek	7/16	Good	-	-	57	-	-
Wolf Creek 7/	7/16	-	-	-	160	-	-
Turnaround Creek	7/16	Good	-	-	268	-	-
Blacksand Creek 7/	7/23	-	-	-	625	-	-
Melozi Hot Springs Creek	7/16	Good	9	-	1,469	-	-
			9	-	2,583	-	-
Tanana River drainage							
Kantishna River drainage							
Toklat River 2/							
Upper mainstem 2/	10/4-10		-	-	-	72,583	-
Lower mainstem	10/4		-	-	-	64,540	-
Sushana Creek 2/	10/4		-	-	-	20,000	-
Geiger Creek 2/	10/4		-	-	-	15,000	-
Subtotal			-	-	-	172,133	-
Nenana River							
Lost Slough	10/10		-	227	-	-	-
Seventeen Mile Slough	10/10		-	1,987	-	-	-
			-	2,214	-	-	-
Chena River	7/24-8/3	Poor	1,159	-	1,025	-	-
Salcha River	7/24	Good	4,789	-	3,080	-	-
Upper Tanana River drainage							
Benchmark #736 Slough	11/8	Fair	-	-	-	2,714	-
Richardson Clearwater	11/8	Fair	-	372	-	100	-
Delta River	11/8	Good	-	-	-	8,125	-
Tanana R. (bridge to Island)	11/8	Fair	-	-	-	20,820	-
Bluff Cabin Slough			-	-	-	6,875	-
Clearwater Lake 3/ and outlet			-	1,015	-	6,875	-
Delta clearwater R. 3/			-	8,970	-	-	-
One Mile Slough	11/8	Poor	-	-	-	3,880	-
Subtotal Upper Tanana River			-	10,357	-	42,484	-
Subtotal Tanana River Drainage			5,948	12,571	4,085	214,617	-
Porcupine River drainage							
Sheenjek River	9/26	Good	-	-	-	41,140	-
Fishing Branch River	10/25	Fair	-	12	-	44,080	-
Subtotal			-	12	-	85,220	-
Yukon Territory Streams							
Whitehorse Fishway 6/			1,184	-	-	-	-
Takhini River 5/	8/20		100	-	-	-	-
Little Salmon River	8/18	Poor	489	-	-	-	-
Big Salmon River	8/18	Fair	632	-	-	-	-
Tatchun Creek 6/			150				
Nisutlin River	8/18	Good	713	-	-	-	-
Wolf River	8/18	Good	183	-	-	-	-
Kluane River	10/28					4,640	
Teslin River 6/	8/18	Poor	28	-	-	-	-
Subtotal			3,476	-	-	4,640	-
TOTAL YUKON RIVER DRAINAGE			15,227	12,517	460,315	304,477	2,167

1/ Only peak estimates listed, carcasses included (data in parenthesis not included in subtotals).
2/ Combined aerial and foot surveys.
3/ Boat survey.

Appendix Table 1 Yukon River drainage commercial and subsistence salmon catches, 1903-1979

	Commercial Catch											Subsistence Catch								Total Utilization							
	Alaska				Yukon Territory			Total				Alaska 1/			Yukon Territory			Totals			Alaska			Yukon Territory			Total		
YEAR	KING	COHO	CHUM	TOTAL	KING	CHUM	TOTAL	KING	COHO	CHUM	TOTAL	KING	OTHER SALMON 2/	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL
1903							4,666 3/				4,666															4,666			4,666
1904																													
1905																													
1906																													
1907																													
1908							7,000				7,000															7,000			7,000
1909							9,238				9,238															9,238			9,238
1910																													
1911																													
1912																													
1913							12,133				12,133															12,133			12,133
1914							12,573				12,573															12,573			12,573
1915							10,466				10,466															10,466			10,466
1916							9,566				9,566															9,566			9,566
1917																													
1918	12,239	25,144	73,921	112,304			7,066	12,239	26,144	73,921	119,370		1,400,000	1,400,000					1,400,000	1,400,000	12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
1919	104,822	37,070	327,898	469,790			1,800	104,822	37,070	327,898	471,590		269,000	269,000					269,000	269,000	104,822	738,790				1,800	104,822	740,590	845,412
1920	58,467		155,655	214,122			12,000	58,467		155,655	226,122	20,000	860,000	880,000				20,000	860,000	880,000	78,467	1,015,655	1,843,612			12,000	78,467	1,015,655	1,106,122
1921	69,646	1,000	111,098	181,744			10,840	69,646	1,000	111,098	192,584										69,646	112,098	181,244			12,840	69,646	112,098	192,584
1922	16,825			16,825			2,420	16,825			19,245	15,000	330,000	345,000				15,000	330,000	345,000	31,825	330,000	361,825			2,420	31,825	330,000	364,245
1923	13,393			13,393			1,833	13,393			15,226	17,500	435,000	452,500				17,500	435,000	452,000	30,893	435,000	465,893			1,833	30,893	435,000	467,726
1924	27,375			27,375			4,560	27,375			31,935		1,130,000	1,130,000					1,130,000	1,130,000	27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
1925							3,900				3,900	15,000	259,000	274,000				15,000	259,000	274,000	15,000	259,000	274,000			3,900	15,000	259,000	277,900
1926							4,373				4,373	20,500	555,000	575,500				20,500	555,000	575,500	20,500	555,000	575,500			4,373	20,500	555,000	579,873
1927							5,366				5,366		520,000	520,000					520,000	520,000		520,000	520,000			5,366		520,000	525,366
1928							5,733				5,733		670,000	670,000					670,000	670,000		670,000	670,000			5,733		670,000	675,733
1929							5,266				5,266		537,000	537,000					537,000	537,000		537,000	537,000			5,226		537,000	542,226
1930							3,660				3,660		633,000	633,000					633,000	633,000		633,000	633,000			3,650		633,000	636,660
1931							3,473				3,473	26,693	565,000	591,693				26,693	565,000	591,693	26,693	565,000	591,693			3,473	26,693	565,000	595,166
1932	4,739			4,739			4,200	4,739			8,939	23,160	1,092,000	1,115,160				23,160	1,092,000	1,115,160	27,899	1,092,000	1,119,899			4,200	27,899	1,092,000	1,124,099
1933	8,829			8,829			3,333	8,829			12,162	19,950	603,000	622,950				19,950	603,000	622,950	28,779	603,000	631,779			3,333	28,779	603,000	635,112
1934	25,365			25,365			2,000	25,365			27,365		474,000	474,000					474,000	474,000	23,365	474,000	497,365			2,000	23,365	474,000	499,365
1935	7,265			7,265			3,466	7,265			10,731	20,400	537,000	557,400				20,400	537,000	557,400	27,665	537,000	564,665			3,466	27,665	537,000	568,131
1936	20,963			20,963			3,400	20,963			24,363	22,750	560,000	582,750				22,750	560,000	582,750	43,713	560,000	603,713			3,400	43,713	560,000	607,113
1937	6,226			6,226			3,746	6,226			9,972	5,528	346,000	351,528				5,528	346,000	351,528	12,154	346,000	358,154			3,746	12,154	346,000	361,900
1938	13,727			13,727			860	13,727			14,587	19,244	340,450	359,694				19,244	340,450	359,694	32,971	340,450	373,421			860	32,971	340,450	374,281
1939	9,987			9,987			720	9,987			10,707	18,050	327,650	345,700				18,050	327,650	345,700	28,037	327,650	355,687			720	28,037	327,650	356,407
1940	18,053			18,053			1,153	18,053			19,206	14,400	1,029,999	1,043,400				14,400	1,029,000	1,043,400	32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
1941	29,905			29,905			2,806	29,905			32,711	17,703	438,000	455,703				17,703	438,000	455,703	47,608	438,000	485,608			2,806	47,608	438,000	488,414
1942	22,487			22,487			713	22,487			23,200		197,000	197,000					197,000	197,000	22,487	197,000	219,487			713	22,487	197,000	220,200
1943	27,650			27,650			609	27,650			28,259		200,000	200,000					200,000	200,000	27,650	200,000	227,650			609	27,650	200,000	228,259
1944	14,232			14,232			986	14,232			15,218										14,232		14,232			986	14,232		15,218
1945	19,727			19,727			1,333	19,727			21,060										19,727		19,727			1,333	19,727		21,060
1946	22,782			22,782			353	22,782			23,135										22,782		22,782			353	22,782		23,135
1947	54,026			54,026			120	54,026			54,146										54,026		54,026			120	54,026		54,146
1948	33,842			33,842				33,842			33,842										33,842		33,842				33,842		33,842
1949	36,379			36,379				36,379			36,379										36,379		36,379				36,379		36,379
1950	41,808			41,808				41,808			41,808										41,808		41,808				41,808		41,808
1951 3/	56,278			56,278				56,278			56,278										56,278		56,278				56,278		56,278
1952	38,637	10,868		49,505				38,637	10,868		49,505										38,637	10,868	49,505				38,637	10,868	49,505
1953	58,859		5,977	64,836				58,859		5,977	64,836		380,000	380,000					380,000	380,000	58,859	385,977	444,836				58,859	385,977	444,836
1954	64,545		14,375 4/	78,920				64,545		14,375	78,920										64,545	14,375	78,920				64,545	14,375	78,920
1955	55,925			55,925				55,925			55,925										55,925		55,925				55,925		55,925
1956	62,208	1	10,742 5/	72,951				62,208	1	10,742	72,951										62,208	10,743	72,951				62,208	10,743	72,951
1957	63,623			63,623				63,623			63,623										63,623		63,623				63,623		63,623
1958	63,375			63,375	3,000	1,500	4,500 7/	66,735		1,500	68,235	11,890	337,500	349,390	8,000		8,000	19,890	337,500	357,390	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
1959	78,370			78,370	2,477	1,098	3,575	80,847		1,098	81,945				5,957	2,000 7/	7,957	5,957	2,000	7,957	78,370		78,370	8,434	3,098	11,532	86,804	3,098	89,902
1960 6/	67,597			67,597	4,085	5,493	9,578	71,682		5,493	77,175				6,965	8,429	15,394	6,965	8,429	15,394	67,597		67,597	11,050	13,922	24,972	78,647	13,922	92,569
1961	120,260	2,855	42,577 5/	165,692	3,446	3,278	6,724	123,706	2,855	45,885	172,416	21,488	407,089	428,577	10,376	5,800	16,176	31,864	412,889	444,753	141,748	452,521	594,269	13,822	9,078	22,900	155,570	461,599	617,169
1962	94,734	22,926	53,160 6/	170,820	4,037	936	4,973	98,771	22,926	54,096	175,793	11,110	349,141	360,251	10,500	9,300	19,800	21,610	358,441	380,051	105,844	425,227	531,071	14,537	10,236	24,773	120,381	435,463	555,844
1963	116,994	5,572 5/		122,566	2,283	2,192	4,475	119,277	5,572	2,192	127,041	24,862	396,125	420,987	8,108	25,500	33,608	32,970	421,625	454,595	141,856	401,697	543,553	10,931	27,692	38,083	152,247	429,389	581,636
1964	93,583	2,446	8,347	104,380	3,208	1,929	5,137	96,795	2,446	10,276	109,617	16,231	481,440	497,671	6,646	4,181	10,827	22,877	485,621	508,498	109,818	492,233	602,051	9,854	6,110	15,904	119,672	498,343	618,015
1965	118,098	350	23,317	141,765	2,265	2,071	4,336	120,363	350	25,388	146,101	16,608	449,131	465,739	3,115	9,800	12,915	19,723	458,931	478,654	134,706	472,798	607,504	5,380	11,871	17,251	140,086	484,669	624,755
1966	93,315	19,254	71,045 5/	183,614	1,942	3,157	5,099	95,257	19,254	74,202	188,713	11,572	206,011	217,583	2,700	8,600	11,300	14,272	214,611	228,883	104,887	296,310	401,197	4,642	11,757	16,399	109,529	308,067	417,596
1967	129,706	11,047	49,453 5/	190,205	2,187	3,343	5,530	131,893	11,047	52,796	195,736	16,448	274,977	291,425	3,213	13,600	16,813	19,661	288,577	308,238	146,154	335,477	481,631	5,400	16,943	22,343	151,554	352,420	503,974
1968	106,526	13,303	67,397 5/	187,224	2,212	435	2,647	108,732	13,303	67,830	189,871	12,106	178,507	198,613	2,900	11,100	14,000	15,006	189,607	204,613	118,632	259,205	377,837	5,112	11,535	16,647	123,744	270,740	394,484
1969	90,223	14,981	191,860 5/	297,064	1,640	2,279	3,919	91,863	14,981	194,139	300,983	14,000	208,254	222,254	1,000	5,500	6,500	15,000	213,754	228,754	104,223	415,095	519,318	2,640	7,779	10,419	106,863	422,874	529,737
1970	80,269	12,246	356,724 5/	439,238	2,611	2,479	5,090	82,880	12,245	349,203	444,328	13,874	222,005	235,879	2,100	1,200	3,300	15,974	223,205	239,179	94,143	580,974	675,117	4,711	3,679	8,390	98,854	584,653	683,507
1971	110,507	12,203	289,684 5/	412,394	3,178	1,761	4,939	113,685	12,203	291,445	417,333	25,684	228,649	254,333	2,800	14,000	16,800	28,044	228,749	256,793	136,191	530,536	666,727	5,978	15,761	21,739	142,169	546,297	688,466
1972	92,840	22,233	287,844	402,917	1,769	2,532	4,301	94,609	22,233	299,376	407,218	20,256	144,008	164,266	1,642	8,000	9,642	21,868	151,008	172,876	113,098	454,085	567,183	3,426	10,532	13,958	116,524	464,617	581,141
1973	75,353	36,641	518,035 4/	640,029	1,871	2,228	4,099	77,224	36,641	520,263	634,128	24,317	214,682	238,999	2,136	6,938	9,054	26,453	221,620	248,053	99,670	769,358	869,028	7,987	9,166	13,153	103,657	778,524	882,181
1974	97,919	16,240	879,243	993,402	2,214	3,010	5,224	100,133	16,240	882,253	998,626	19,964	321,587	341,551	3,379	8,636	12,015	23,343	330,223	353,566	117,883	1,217,070	1,334,953	5,593	11,646	17,239	123,476	1,228,716	1,352,192
1975	63,740	2,346	984,859	1,050,945	3,000	2,500	5,500	66,740	2,346	987,359	1,056,445	13,045	298,479	311,524	3,000	18,100	21,100	15,645	311,979	327,624	76,785	1,295,684	1,362,469	6,000	20,600	26,600	82,785	1,306,284	1,389,069
1976	88,671	5,197	761,509	855,377	3,500	1,000	4,500	92,171	5,197	762,509	859,877	17,806	259,199	277,005	1,523	3,425	4,948	19,329	262,624	281,953	106,477	1,025,905	1,132,382	5,000	4,425	9,425	111,477	1,030,330	1,141,807
1977	96,414	1,705	797,697	931,816	4,620	3,990	8,610	101,034	37,705	801,687	940,426	17,581	258,606	276,147	2,807	8,521	11,328	20,388	267,127	287,515	113,995	1,094,008	1,208,003	7,427	12,511	19,938	121,422	1,106,519	1,227,941
1978	97,602	25,960	1,288,829	1,412,391	2,975	3,356	6,331	100,577	25,960	1,292,185	1,418,722	27,391	293,501	320,972	2,906	6,210	9,116	30,297	299,791	330,088	124,993	1,608,370	1,733,363	5,881	9,566	15,447	130,874	1,617,936	1,748,810
1979	129,056	17,110	1,165,980	1,312,146	6,175	9,084	15,259	135,231	17,110	1,175,064	1,327,405	31,005	439,328	470,333	4,200	13,000	17,200	35,205	452,328	487,533	168,061	1,622,418	1,782,479	10,375	22,084	32,459	170,436	1,644,502	1,814,938
1980	152,870	8741	1,358,310	1,519,921	6,459			159,329																					

1/ Does not include subsistence catches from the villages outside of the Yukon River mouth.
2/ Mostly chum salmon, but includes small numbers of pink and coho salmon.
3/ Data source for Alaska commercial catches: USFWS Stat. Digest No. 50 for the years 1951-59, unless otherwise indicated.
4/ Data source: Alaska Fisheries and Fur-Seal Industry Report for 1954. 5/ Includes small numbers of pink or red salmon (less than 300).
6/ Data source for Alaska commercial catches: ADF&G Stat. Leaflets for years since 1960.
7/ Data source: Environment Canada, Fisheries Service (Whitehorse) since 1958.
8/ Catch data for years 1903-1947 obtained by dividing total poundage of mixed salmon by an arbitrary weight of 15 lbs. Species breakdown is unknown. Figures are considered conservative (data collected by Royal Canadian Mounted Police).

Appendix Table 2. Commercial salmon catches by species and subdistricts, Yukon district, 1960-1979.

KING SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	84,463	29,028	4,965	118,456	-	-	-	1,804	120,260
1962	67,099	22,224	4,687	94,010	-	-	-	724	94,734
1963	85,004	24,211	6,976	116,191	-	-	-	803	116,994
1964	67,555	20,246	4,705	92,506	-	-	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	1,863	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	1,988	93,315
1967	104,350	20,289	3,618	128,257	-	-	-	1,449	129,706
1968	79,465	21,392	4,543	105,400	-	-	-	1,126	106,526
1969	70,862	14,799	3,577	89,238	-	-	-	985	90,223
1970	57,681	17,210	3,712	78,603	-	-	-	1,666	80,269
1971	86,042	19,226	3,490	108,758	-	-	-	1,749	110,507
1972	70,052	17,855	3,841	91,748	-	-	-	1,092	92,840
1973	56,981	13,859	3,204	74,044	-	-	-	1,309	75,353
1974	71,680	17,947	3,471	93,098	685	2,663	1,473	4,821	97,919
1975	44,585	11,187	4,207	59,979	389	2,872	500	3,761	63,740
1976	62,632	17,413	4,239	84,284	385	2,900	1,102	4,387	88,671
1977	69,456	16,781	3,943	90,180	959	4,267	1,008	6,234	96,414
1978	57,890	32,335	2,917	93,142	701	3,115	644	4,460	97,602
1979	76,269	41,357	5,108	122,734	1,969	3,520	833	6,322	129,056
1980	87,871	50,824	5,240	143,935	1,521	5,338	2,076	8,935	152,870

COHO SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	-	-	-	-	-	-	-	-	-
1961	2,855	-	-	2,855	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	22,926
1963	5,572 1/	-	-	5,572	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	13,303
1969	14,041	-	845	14,886	-	-	-	95	14,981
1970	12,245	-	-	12,245	-	-	-	-	12,245
1971	12,165	-	-	12,165	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	36,641
1974	13,728	176	-	13,904	-	909	1,427	2,336	16,240
1975	2,288	-	-	2,288	-	5	53	58	2,346
1976	4,084	17	-	4,101	-	-	1,096	1,096	5,197
1977	30,588	5,312	521	36,421	-	-	1,600	1,600	38,021
1978	16,262	5,835	758	22,855	32	7	3,066	3,105	25,960
1979	11,244	2,920	-	14,164	155	-	2,791	2,946	17,110
1980	4,828	2,660	—	7,488	27	—	1,226	1,253	8,741

Appendix Table 2. Commercial salmon catches by species & subdistricts, Yukon district 1960-1979 (Continued)

CHUM SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	-	-	-	-	-	-	-	-	-
1961	42,577 1/	-	-	42,577	-	-	-	-	42,577
1962	53,160 1/	-	-	53,160	-	-	-	-	53,160
1963	-	-	-	-	-	-	-	-	-
1964	8,347	-	-	8,347	-	-	-	-	8,347
1965	22,936	-	-	22,936	-	-	-	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	46,148	1,425	1,880	49,453	-	-	-	-	49,453
1968	62,852 1/	1,407	3,136	67,395	-	-	-	-	67,395
1969	184,411	5,024	1,722	191,157	-	-	-	703	191,860
1970	320,138	22,394	3,285	346,357	-	-	-	907	346,724
1971	282,461	6,112	50	288,623	-	-	-	1,061	289,684
1972	250,945	33,805	1,840	286,590	-	-	-	1,254	287,844
1973	395,431 1/	109,138 1/	463	505,032	-	-	-	13,003	518,035
1974	641,663	127,644	2,273	771,580	37,079	30,382	40,202	107,663	879,243
1975	576,607	150,259	5,590	732,456	178,720	40,209	33,474	252,403	984,859
1976	382,216	120,959	14,504	517,679	213,019	6,247	24,564	243,830	761,509
1977	385,972	159,051	19,310	564,333	183,932	26,881	22,595	233,328	797,661
1978	523,557	277,086	38,728	839,371	375,617	25,907	47,934	449,458	1,288,829
1979	491,475	270,979	69,395	831,849	222,653	57,282	54,196	334,131	1,165,980
1980	497,853	394,412	58,090	950,355	306,796	42,802	58,357	407,955	1,358,310

TOTAL SALMON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	129,895	29,028	4,965	163,888	-	-	-	1,804	165,692
1962	143,185	22,224	4,687	170,096	-	-	-	724	170,820
1963	90,576	24,211	6,976	121,763	-	-	-	803	122,566
1964	78,348	20,246	4,705	103,299	-	-	-	1,081	104,380
1965	112,554	23,763	3,204	139,521	-	-	-	2,244	141,765
1966	159,878	16,927	4,821	181,626	-	-	-	1,988	183,614
1967	160,423	21,714	6,620	188,757	-	-	-	1,449	190,206
1968	155,470	22,799	7,829	186,098	-	-	-	1,126	187,224
1969	269,314	19,823	6,144	295,281	-	-	-	1,783	297,064
1970	390,064	39,604	6,997	436,665	-	-	-	2,573	439,238
1971	380,668	25,338	3,540	409,546	-	-	-	2,848	412,394
1972	342,702	52,166	5,681	400,549	-	-	-	2,368	402,917
1973	487,272 1/	124,778 1/	3,667	615,717	-	-	-	14,312	630,029
1974	727,071	145,767	5,774	875,034	37,764	33,964	43,102	116,061	993,402
1975	623,480	161,446	9,797	794,723	179,109	43,086	34,027	256,222	1,050,945
1976	448,932	138,389	18,743	606,064	213,404	9,147	26,762	249,313	855,377
1977	486,016	181,144	23,744	690,934	184,891	31,066	25,203	241,162	932,096
1978	597,709	315,256	42,403	955,368	376,350	29,029	51,644	457,023	1,412,391
1979	578,988	315,256	74,503	968,747	224,777	60,802	57,820	343,399	1,312,146
1980	590,552	447,896	63,330	1,101,778	308,344	48,140	61,659	418,143	1,519,921

1/ Includes small numbers of pink or red salmon.

Appendix Table 3. Yukon district commercial, vessel and gill net licenses issued and numbers of fishwheels operated by subdistrict, 1960-1977.

COMMERCIAL

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	193	96		289				18	307
1961	238	130	26	394				18	412
1962	321	148	46	515				21	536
1963	285	131	30	446				6	452
1964	319	119	31	469				20	489
1965	327	143	34	504				38	542
1966	393	143	21	557				21	578
1967									607
1968				563				22	585
1969	406	131	32	569				30	599
1970	393	164	33	590				38	628
1971	459	162	37	658				57	715
1972	473	193	43	709				56	765
1973	515	206	50	771				101	872
1974	460	232	55	747	39	45	69	153	900
1975	553	243	51	847	159	100	84	343	1,190
1976	599	299	56	954	120	84	71	275	1,229
1977	515	283	64	862	124	60	46	230	1,092

FISHING VESSEL

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	186	33		219				10	229
1961	210	112	18	340				10	350
1962	320	127	31	478				12	490
1963	272	113	22	407				6	413
1964	314	101	24	439				13	452
1965	322	111	26	459				28	487
1966	365	113	18	496				21	517
1967	381	126	22	529				20	549
1968	340	124	26	490				22	512
1969	361	93	24	478				25	503
1970	349	143	27	519				30	549
1971	416	145	29	590				44	634
1972	426	153	35	614				47	661
1973	458	167	38	663				77	740
1974	430	189	42	661	30	34	46	110	771
1975	511	197	36	744	116	77	51	244	988
1976	513	203	36	752	92	70	48	210	962
1977	411	187	37	635	90	51	32	173	808

SET GILL NETS

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	183	59		242				2	244
1961	217	101	19	337				1	338
1962	303	117	14	434				4	438
1963	259	101	21	381				4	385
1964	277	100	28	405				12	417
1965	292	98	23	413				13	426
1966	345	101	17	463				12	475
1967	333	72	21	426				5	431
1968	314	62	26	402				18	420
1969	346	62	15	423				16	439
1970	345	105	24	474				27	501
1971	399	115	30	544				27	571
1972	439	130	36	605				30	635
1973	450	159	30	639				41	680
1974	423	158	36	617	13	27	27	67	684
1975	506	161	33	700	54	65	21	140	840
1976	480	153	28	661	31	50	19	100	761
1977	416	136	34	586	22	36	6	64	650

DRIFT GILL NETS

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960	2	44		46					46
1961	17	86		103					103
1962	55	98	24	177					177
1963	24	85	5	114					114
1964	65	89	5	159					159
1965	62	98	4	164					164
1966	97	88	4	189					189
1967	135	109	5	249					249
1968	111	104	8	223					223
1969	142	100	10	252					252
1970	110	127	16	253				1	254
1971	140	134	19	293				2	295
1972	155	142	17	314				5	319
1973	165	151	18	334				1	335
1974	109	168	21	298					298
1975	117	181	13	311					311
1976	166	193	22	381					
1977	142	174	28	344					381 344

FISHWHEELS 2/

Year	Lower Yukon Area 1/ 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Totals
1960									
1961									
1962								13	13
1963								3	3
1964								7	7
1965								29	29
1966								17	17
1967									
1968								18	18
1969								15	15
1970								17	17
1971								26	26
1972								26	26
1973			4 3/	4				57	61
1974					24	23	38	85	85
1975	1	4		5	98	32	39	169	174
1976					78	47	44	169	169
1977					68	24	35	127	127

1/ Distribution of licenses by subdistrict represents that at the beginning of the fishing season (June 1); some fishermen transfer to other subdistricts during the season.

2/ Fishwheels are legal types of gear but license fees are not required. Number of fishwheels operated each year obtained from commercial and fishing vessel license application forms where fishermen indicated type of gear to be operated.

3/ Fishwheels were operated in the vicinity of Kaltag and Nulato. Beginning in 1974, these villages are in subdistrict 334-40.

Appendix Table 4. Actual number of commercial salmon fishing vessels by subdistrict, Yukon district, 1971-1979 1/

KING SALMON SEASON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	405	154	33	592	--	--	--	--	--
1972	426	153	35	614	--	--	--	--	--
1973	438	167	38	643	--	--	--	--	--
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657					

FALL SEASON

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	352	--	--	352	--	--	--	--	--
1972	353	75	3	431	--	--	--	--	--
1973	445	183	--	628	--	--	--	--	--
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
[illegible]	337	172	37	546	28	34	32	94	640
[illegible]	429	204	28	661	24	43	30	127	788
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650					

COMBINED SEASONS

Year	Lower Yukon Area 334-10	334-20	334-30	Subtotals	Upper Yukon Area 334-40	334-50	334-60	Subtotals	Total
1971	473	154	33	660	--	--	--	27	687
1972	476	153	35	664	--	--	--		664
1973	529	205	38	772	--	--	--	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	664	96	53	39	188	852
1978	472	221	29	722	82	53	38	173	895
1979	461	230	33	724	90	49	40	179	903
1980	432	247	27	706	86	51	38	175	881

1/ Actual number of fishing vessels refer to those boats which made at least one delivery. Data presented shows the number of vessels that operated in each subdistrict. Some individual fishing vessels in the lower Yukon area may have operated in more than one subdistrict during the year.

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Appendix Table 5. Comparative commercial king salmon catch data, Yukon district, 1960-1979 1/

	Year	334-10	334-20	Sub-total (10+20)	334-30
Commercial Catch	1960	50,713	15,994	66,707	
	1961	84,406	29,028	113,434	4,965
	1962	67,072	22,224	89,296	4,687
	1963	85,004	24,211	109,215	6,976
	1964	67,555	20,246	87,801	4,705
	1965	89,268	23,763	113,031	3,204
	1966	70,783	16,927	87,710	3,612
	1967	104,335	20,289	124,624	3,618
	1968	79,465	21,392	100,857	4,543
	1969	70,588	14,799	85,387	3,577
	1970	57,502	17,210	74,712	3,712
	1971	84,397	19,226	103,623	3,490
	1972	68,059	17,317	85,376	3,841
	1973	52,790	12,479	65,269	3,204
	1974	69,457	17,464	86,921	3,413
	1975	41,550	9,064	50,614	4,177
	1976	56,392	15,296	71,688	4,070
	1977	65,745	15,328	81,073	3,938
	1978	53,198	28,872	82,070	2,657
	1979	61,790	33,347	95,137	3,073
	1986	75,857	42,755	118,612	3,896

	Year	334-10	334-20	Sub-total (10+20)	334-30
Boat Hours (Catch per boat hour)	1960	40,848 (1.24)	34,914 (0.46)	75,762 (0.88)	
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)	2,808 (1.77)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)	2,520 (1.86)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)	5,616 (1.24)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)	4,596 (1.02)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)	2,286 (1.40)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)	1,782 (1.23) 2/
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)	4,050 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)	3,745 (1.21)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)	3,577 (0.72)
	1970	61,260 (0.94)	20,460 (0.84)	81,720 (0.91)	3,566 (1.04)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)	4,790 (0.73)
	1972	79,236 (0.86)	19,872 (0.87)	99,108 (0.86)	5,916 (0.65)
	1973	75,036 (0.70)	23,496 (0.53)	98,532 (0.66)	7,282 (0.44)
	1974	86,256 (0.80)	29,808 (0.60)	116,064 (0.75)	7,032 (0.49)
	1975	49,944 (0.83)	8,376 (1.08)	58,320 (0.87)	3,552 (1.18)
	1976	64,572 (0.87)	23,484 (0.65)	88,150 (0.81)	4,392 (0.92)
	1977	42,618 (1.54)	15,180 (1.01)	57,798 (1.40)	3,636 (1.08)
	1978	57,528 (0.92)	25,524 (1.13)	83,052 (0.99)	1,872 (1.42)
	1979	53,040 (1.17)	23,904 (1.39)	76,944 (1.24)	1,464 (2.10)
	1980	45,348 (1.67)	20,196 (2.11)	65,544 (1.81)	1,368 (2.57)

1/ 334-10 and 334-20 data are only for the king salmon season (June & early July).

2/ Catch per vessel hour does not include 1,421 king salmon captured by an unknown number of fishermen.

Appendix Table 6 . Comparative King Salmon commercial catch data by date, Kingsalmon season, subdistrict 334-10, Yukon District, 1961- 1979.

Cumulative catch 1/ (Cumulative catch /boat hour) 2/

Date	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
6/1							4.4(0.41)												
6/2									3.8(0.42)										
6/3								0.1(0.05)		0.01(0.03)			0.3(0.15)	3.5(0.46)					6.1(0.81)
6/4			0.7(0.26)				21.3(0.85)		8.1(0.34)										
6/5								1.4(0.16)					2.8(0.25)	11.0(0.60)				2.5(0.35)	11.0(0.71)
6/6			4.7(0.45)		0.6(0.17)		37.9(0.98)		26.8(0.75)	0.5(0.16)		0.04(0.08)			0.2(0.09)				
6/7	3.6(0.32)					0.6(0.16)		11.3(0.62)			0.03(0.15)		9.4(0.44)	25.7(0.82)				8.3(0.56)	30.5(1.26)
6/8			16.9(0.87)		4.1(0.31)		62.7(1.18)		41.7(0.79)	3.0(0.32)		1.04(0.17)			0.6(0.11)		0.04(0.05)		
6/9		8.0(0.57)				4.8(0.38)		25.7(0.76)			1.2(0.29)		21.5(0.59)	36.8(0.84)		0.1(0.06)		25.9(0.91)	39.8(1.08)
6/10			34.3(1.14)		19.3(0.85)		66.5(0.99)		47.9(0.75)	8.4(0.48)		4.5(0.24)			1.7(0.17)		2.6(0.41)		
6/11	46.6(1.61)			0.2(0.11)		23.1(0.86)		31.8(0.69)			5.1(0.30)		30.6(0.65)	55.6(0.99)		3.3(0.27)		33.4(0.91)	56.5(1.23)
6/12			50.3(1.27)		42.7(1.22)		83.4(1.02)		58.3(0.82)	32.7(1.07)		21.5(0.68)			7.4(0.39)		13.0(0.92)		
6/13		27.5(0.76)		9.5(0.88)		40.9(1.00)		56.7(0.90)			18.2(0.61)		42.6(0.68)	58.5(0.96)		12.9(0.49)		47.0(0.96)	61.8(1.17)
6/14			56.8(1.13)		69.1(1.47)		98.0(1.02)		66.3(0.85)	39.3(0.97)		37.8(0.77)			24.5(0.75)		39.3(1.50)		
6/15	66.6(1.42)			37.0(1.80)		54.4(1.06)		70.3(0.94)		50.2(1.07)	40.7(0.88)		52.8(0.70)	65.7(0.90)	34.3(0.83)	28.3(0.69)		53.2(0.92)	
6/16			72.0(1.23)		77.2(1.32)		104.3(1.02)		70.6(0.83)			53.2(0.86)		69.5(0.80)			57.0(1.62)		
6/17		62.3(0.95)		48.5(1.54)		66.7(1.08)		77.9(0.90)		55.0(0.99)	75.3(1.29)				41.6(0.83)	42.1(0.76)			
6/18	79.0(1.23)		83.1(1.22)		81.0(1.18)					57.5(0.94)		68.1(0.86)				56.4(0.87)	65.7(1.54)		
6/19				55.3(1.38)		70.8(1.01)		79.5(0.86)			84.4(1.15)								
6/20			85.0(1.18)		89.3(1.14)														
6/21		67.1(0.79)		65.3(1.32)															
6/22	84.4(1.07)																		
6/23				67.6(1.39)															
6/24																			
6/25																			
6/26																			
6/27																			
6/28																			
6/29																			
6/30																			
7/1																			
7/2																			
7/3																			
7/4																			
7/5																			
7/6																			
7/7																			
7/8																			

1/ Cumulative catch in thousands of fish by period for the King salmon season (June & early July).

2/ Boat hours computed by multiplying the number of hours in the period by number of boats making at least one delivery during the period; however for the years 1961-1966 the number of boats in the period was obtained by using the greatest number of boats making at least one delivery during any day of the period.

Appendix Table 7. King salmon catches by statistical areas, subdistrict 334-10 of the Yukon district 1965-1979 1/

Statistical Area	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1986	1978	1979
334-11 (Black River)	2,266	2,495	2,110	4,047	1,405	4,992	3,038	2,730	7,193	2,973	7,109	7,569	10,714	444	1,097	930
12 (South Mouth)	18,140	20,038	25,811	27,859	21,894	23,367	25,105	11,638	28,166	28,372	13,746	25,925	15,289	11,496	10,829	10,722
13 (Sunshine Bay)	8,137	5,460	6,203	7,997	9,635	5,258	7,135	3,435	4,302	6,863	8,167	6,574	7,623	2,794	3,760	3,039
14 (Kwiguk)	6,836	4,143	7,730	3,202	5,594	5,351	10,342	9,073	3,468	3,964	259	782	825	9,049	3,991	5,256
15 (Middle Mouth)	23,729	10,858	27,202	6,700	12,875	6,079	16,853	18,375	756	12,801	1,406	4,521	15,181	27,410	19,711	10,760
16 (North Mouth)	4,458	3,009	4,729	919	3,833	849	3,924	5,276	40	1,930	506	1,348	1,544	9,169	3,387	8,129
17 (Head of Passes	16,114	12,898	18,583	17,378	9,930	4,890	12,037	13,059	6,683	6,674	6,760	5,086	6,736	10,400	6,590	15,784
18 (Fish Village)	9,588	11,882	11,967	11,363	5,422	6,716	5,963	4,473	2,182	5,880	3,597	4,587	7,833	4,853	3,833	7,170
334-10 Total	89,268	70,783	104,335	79,465	70,588	57,502	84,397	68,059	52,790	69,457	41,550	56,392	65,745		53,198	61,790

1/ Catch data only for king salmon season (June and early July).

Appendix table 6. Comparative summer and fall chum salmon commercial catches, Yukon district, 1971-1979.

	SUMMER CHUMS									FALL CHUMS									TOTAL CHUMS								
	Lower Yukon Area				Upper Yukon Area					Lower Yukon Area				Upper Yukon Area					Lower Yukon Area				Upper Yukon Area				
Year	334-10	334-20	334-30	Sub Total	334-40	334-50	334-60	Sub Total	Total	334-10	334-20	334-30	Sub Total	334-40	334-50	334-60	Sub Total	Total	334-10	334-20	334-30	Sub Total	334-40	334-50	334-60	Sub Total	Total
1961	-	-	-	-	-	-	-	-	-	42,577 1/	-	-	42,577	-	-	-	-	42,577	42,577	-	-	42,577	-	-	-	-	42,577
1962	-	-	-	-	-	-	-	-	-	53,160 1/	-	-	53,160	-	-	-	-	53,160	53,160	-	-	53,160	-	-	-	-	53,160
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	8,347	-	-	8,347	-	-	-	-	8,347	8,347	-	-	8,347	-	-	-	-	8,347
1965	-	-	-	-	-	-	-	-	-	22,936	-	-	22,936	-	-	-	381	23,317	22,936	-	-	22,936	-	-	-	381	23,317
1966	-	-	-	-	-	-	-	-	-	69,836	-	1,209	71,045	-	-	-	-	71,045	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	9,697	1,425	57	11,179	-	-	-	-	11,179	36,451	-	1,823	38,274	-	-	-	-	38,274	46,148	1,425	1,880	49,453	-	-	-	-	49,453
1968	12,995	1,407	68	14,470	-	-	-	-	14,470	49,857 1/	-	3,068	52,925	-	-	-	-	52,925	62,852	1,407	3,136	67,395	-	-	-	-	67,395
1969	55,545	5,024	-	60,569	-	-	-	-	60,569	128,866	-	1,722	130,588	-	-	-	703	131,291	184,411	5,024	1,722	191,157	-	-	-	703	191,860
1970	119,832	17,536	-	137,368	-	-	-	-	137,368	200,306	4,858	3,285	208,449	-	-	-	907	209,356	320,138	22,394	3,285	345,817	-	-	-	907	346,724
1971	93,928	6,112	50	100,090	-	-	-	-	100,090	188,533	-	-	188,533	-	-	-	1,061	189,594	282,461	6,112	50	288,623	-	-	-	1,061	289,684
1972	114,234	20,907	527	135,668	-	-	-	-	135,668	136,711	12,898	1,313	150,922	-	-	-	1,254	152,176	250,945	33,805	1,840	286,590	-	-	-	1,254	287,844
1973	221,644	63,737	463	285,844	-	-	-	-	285,844	173,783	45,304	-	219,087	-	-	-	13,003	232,090	395,427	109,041	463	504,931	-	-	-	13,003	517,934
1974	479,554	72,281	1,605	553,440	29,701	4,462	16,607	50,770	604,210	161,498	53,540	552	215,590	9,213	23,551	24,804	57,568	273,158	641,052	125,821	2,157	769,030	38,914	28,013	41,411	108,338	877,368
1975	435,256	99,944	-	535,200	165,169	13,137	14,650	192,956	728,156	148,459	51,666	5,590	205,715	13,552	27,207	18,682	59,441	265,156	583,715	151,610	5,590	740,915	178,721	40,344	33,333	252,397	993,312
1976	269,523	99,747	10,254	379,524	211,277	860	6,566	218,703	598,227	112,693	21,212	4,250	138,155	1,742	5,387	17,998	25,127	163,282	382,216	120,959	14,504	517,679	213,019	6,247	24,564	243,830	761,509
1977	263,395	107,057	3,459	373,911	169,569	1,153	4,325	175,047	548,958	122,577	51,994	15,851	190,422	13,996	25,695	18,626	58,317	248,739	385,972	159,051	19,310	564,333	183,565	26,848	22,951	233,264	797,697
1978	388,492	225,440	27,201	641,133	364,387	4,897	34,675	403,959	1,045,092	135,065	51,646	11,527	198,238	11,230	21,010	13,259	45,499	243,737	523,557	277,086	38,728	839,371	375,617	25,907	47,934	449,458	1,288,829
1979	390,351	176,937	43,440	610,728	172,278	614	19,880	192,772	803,500	101,124	94,042	25,955	221,121	50,375	56,668	34,316	141,359	362,480	491,475	270,979	69,395	831,849	222,653	57,282	54,196	334,131	1,165,980
1980	391,024	310,531	44,571	746,126	277,006	459	38,905	316,370	1,062,496	106,829	83,881	13,519	204,229	29,790	42,343	19,452	91,585	295,814	497,853	394,412	58,090	950,355	306,796	42,802	58,357	407,955	1,358,310

1/ Includes small numbers of pink or red.

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Appendix Table 9. Comparative commercial summer chum salmon catch data, subdistricts 334-10 and 334-20, Yukon district, 1967-1979.

	Subdistrict 334-10					Subdistrict 334-20				
Year	Duration	Days Fished	Boat Hours	Catch	(catch/boat hour)	Duration	Days Fished	Boat Hours	Catch	(catch/boat hour)
1967	6/8-6/27	11.0	77,208	9,494	(0.12)	-	-	-	-	-
1968	6/6-7/3	14.0	91,380	12,995	(0.13)	6/13-7/2	10.5	27,600	1,407	(0.05)
1969	6/2-6/28	12.5	84,864	8,840	(0.10)	6/15-7/1	8.0	16,620	5,024	(0.30)
1970	6/11-7/3	10.5	58,056	87,169	(1.50)	6/14-7/3	9.0	15,756	17,536	(1.11)
1971	6/14-7/3	10.5	73,032	36,077	(0.49)	6/20-7/5	8.5	17,832	6,112	(0.34)
1972	6/8-6/1	12.5	79,236	69,650	(0.88)	6/15-7/1	8.5	19,296	9,040	(0.47)
1973 1/	6/7-7/11	14.5	100,284	191,040	(1.91)	6/10-7/14	14.5	36,000	56,481	(1.57)
1974	6/3-7/13	16.5	114,624	461,025	(4.02)	6/5-7/16	15.5	35,316	72,281	(2.05)
1975	6/9-7/16	15.0	86,304	394,447	(4.72)	6/22-7/18	10.5	21,024	99,944	(4.75)
1976	6/14-7/14	12.0	90,658	272,493	(3.00)	6/20-7/16	11.0	32,624	99,407	(3.05)
1977	6/13-7/12	12.0	63,036	232,427	(3.69)	6/19-7/15	10.0	27,048	102,759	(3.80)
1978	6/8-7/15	13.5	100,008	395,610	(3.96)	6/8-7/14	13.5	44,376	218,196	(4.92)
1979	6/4-7/14	13.5	106,680	382,069	(3.57)	6/3-7/13	13.5	44,748	174,901	(3.91)
1980	6/9-7/15	12.8	89,412	391,024	(4.37)	6/8-7/17	12.5	48,060	310,531	(6.46)

1/ 6 inch maximum mesh size regulation during late June-early July became effective in 1973.

Appendix Table 10. Comparative commercial coho and chum salmon catch data for the fall season, subdistrict 334-10 Yukon district, 1961-1979.

Year	Dates	Days 1/ Fished	Boat Hours	Commercial catch (catch/boat hour) Coho	Chum
1961	8/1-8/31	16	14,772	2,855 (0.2)	42,461 (2.9)
1962	8/1-9/3	21	46,950	22,926 (0.5)	53,116 (1.1)
1963	8/9-9/6	18	2,100	5,572 (2.7)	no purchases
1964	8/3-8/27	17	8,346	2,446 (0.3)	8,347 (1.0)
1965	8/2-8/4	2/	2/	350 (2/)	22,936 (2/)
1966	7/25-9/10	28	41,994	19,254 (0.5)	69,836 (1.7)
1967	7/24-8/27	21	19,272	9,925 (0.5)	36,451 (1.9)
1969	7/22-8/28	22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/21-8/23	20	39,408	14,041 (0.4)	128,866 (3.3)
1970	7/20-8/26	22	56,160	12,245 (0.2)	200,306 (3.6)
1971	7/22-8/28	22	85,344	11,582 (0.1)	178,744 (2.1)
1972	7/20-8/26	22	81,726	19,655 (0.2)	134,752 (1.6)
1973	7/19-8/25	22	107,136	34,860 (0.3)	173,783 (1.6)
1974	7/18-8/14	12	41,868	13,758 (0.2)	137,235 (3.3)
1975	7/21-8/16	12	52,128	2,240 (0.04)	158,183 (3.0)
1976	7/19-8/13	11	55,026	4,084 (0.07)	91,091 (1.7)
1977	7/18-8/23	11	50,568	30,588 (0.6)	129,486 (2.6)
1978	7/17-8/29	13	56,184	16,262 (0.3)	127,947 (2.3)
1979	7/19-8/14	8	47,352	11,231 (0.2)	101,400 (2.1)
1980	7/17-8/19	7	24,216	4,819 (0.2)	106,829 (4.4)

1/ One "day" is equivalent to 24 hours during open fishing period.
2/ Information not available.

Appendix Table 11. Comparative fall chum salmon commercial catch data by date, fall season, subdistrict 334-10, Yukon district, 1969-1979.

Date	Cumulative catch 1/ (Cumulative catch/boat hour) 1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
7/18		16.1(1.86)			16.4(1.26)					6.3(1.70)	
7/19	3.8(1.10)			18.6(1.91)					21.4(3.72)		
7/20						12.1(1.57)					6.0(1.35)
7/21			8.2(1.05)		53.6(2.03)			6.9(0.73)		11.4(1.36)	
7/22		29.6(1.67)		45.8(2.23)					23.4(2.54)		
7/23	29.7(3.75)						12.9(1.51)				
7/24			31.9(1.71)			24.7(1.76)		9.7(0.60)			13.2(1.31)
7/25		30.4(1.54)			67.4(1.91)					64.2(4.14)	
7/26	44.5(3.48)			54.8(1.88)			37.0(2.33)		33.1(2.38)		
7/27						59.0(2.81)					
7/28			37.6(1.38)		112.8(2.28)			16.7(0.69)		67.0(3.34)	28.0(1.66)
7/29		81.6(2.95)		63.7(1.72)					40.8(2.16)		
7/30	57.0(3.24)						55.9(2.54)				
7/31			53.5(1.48)			86.9(3.16)		79.5(2.24)			37.7(1.62)
8/1		126.8(3.57)			122.9(2.01)					81.4(3.05)	
8/2	71.8(3.20)			70.5(1.62)			86.9(2.80)		41.7(1.91)		
8/3						91.8(2.86)					
8/4			89.6(1.94)		127.9(1.84)			87.3(1.98)		81.8(2.89)	55.2(1.82)
8/5		159.4(3.67)		73.6(1.46)					44.9(1.76)		
8/6	94.2(3.45)						112.4(2.87)				
8/7			104.3(1.89)			93.0(2.73)		87.7(1.85)			93.0(2.44)
8/8		188.4(3.67)			133.9(1.72)					83.2(2.68)	
8/9	108.6(3.39)			108.6(1.85)			134.2(2.90)		94.9(3.06)		
8/10						94.7(2.57)					
8/11			110.2(1.74)		164.6(1.84)			88.4(1.69)		84.8(2.53)	94.3(2.27)
8/12		189.9(3.47)		123.5(1.86)					96.4(2.76)		
8/13	112.5(3.21)						134.6(2.78)	91.0(1.65)			
8/14			148.3(2.07)			137.4(3.31)					
8/15		192.2(3.35)			170.7(1.77)					86.2(2.30)	101.4(2.14)
8/16	120.7(3.18)			125.1(1.65)			158.2(3.04)		113.0(2.79)		
8/17											
8/18			153.2(1.95)		177.5(1.70)					96.4(2.29)	
8/19		209.1(3.45)		146.3(1.77)					120.0(2.65)		
8/20	130.4(3.18)										
8/21			177.4(2.10)		185.3(1.64)					118.3(2.44)	
8/22		214.5(3.39)		150.5(1.79)					125.8(2.55)		
8/23	132.6(3.09)										
8/24			185.5(2.05)		187.5(1.57)					122.7(2.29)	
8/25				153.3(1.76)							
8/26		216.4(3.34)									
8/27			187.0(2.01)								
8/28					189.3(1.54)					127.9(2.28)	
8/29				154.6(1.60)							
8/30											
8/31											

1/ Cumulative catch in thousands of fish by period beginning July 18. Fall chum salmon run usually well underway in the lower Yukon River by this date.

Appendix Table 12. Commercial salmon pack by species and type of processing, Yukon district, 1960-1979 [1]

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs).			Cured King Salmon		Cured Chum Salmon		Salmon
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2 Tierce	Tierces	1/2 Tierce	Roe (lbs.)
1960	13,000			[2]	[2]	[2]	250	160			
1961	19,474			[2]	[2]	[2]	504	146			
1962	15,959	512	1,760	[2]	[2]	[2]	464	280			
1963	16,400	1,190		[2]	[2]	[2]	[2]	[2]			
1964	12,041			[2]	17,000	66,770	537	499			
1965	10,149			275,000	2,500	180,980	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973[3]	829,906[3]	647	95	15		29,000
1970	6,431	1,682	6,413	716,600	12,960	1,728,000	447	191	51		26,300
1971	6,509	582	3,213	1,058,034	45,836	1,432,455	699	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147	–		65,278
1973	5,227	1,808	9,902	1,339,317	181,928	2,929,532	61	133	–	72	137,594
1974	6,660	683	21,874	1,062,666	58,816	3,879,300	381	56	57	–	208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,266,679	93	92	72	10	226,893
1977	4,642	418	9,428	1,513,484	270,241	4,877,918	180	237	28	–	210,568
1978	5,711	74	9,340	1,473,358	168,241	6,369,156	222	117	7	75	261,422
1979	8,277	22	7,864	2,014,156	106,011	8,098,875	112	91	–	2	410,540
1980	8,764	130	15,783	3,198,262[1]	48,150[1]	6,590,009[1]	29	18	–	37	

[1] LWS. YUK ONLY

[1] Pack represents type of processing when fish were stripped out of district.
[2] Information not available.
[3] Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

Appendix Table 13. Dollar value estimates of Yukon district commercial fishery, 1961-1979. 1/

Year	Gross value of catch to fishermen				Wages earned 2/	Total income to district	Wholesale value of pack 3/	Tax revenues to state 4/
	King	Coho	Chum	Total				
1961	420,900	1,400	14,700	437,000			1,292,300	37,500
1962	330,300	11,500	20,100	361,900			1,275,250	50,400
1963	409,500	2,800	-	412,300			1,550,400	42,000
1964	351,000	1,200	2,200	354,400			1,203,800	35,000
1965	531,400	200	10,700	542,300			1,412,700	42,000
1966	419,900	9,600	25,000	454,500			1,308,100	37,000
1967	583,700	5,500	17,200	606,400	250,000	856,400	1,864,800	41,700
1968	494,300	6,700	34,000	535,000	264,000	799,000	1,655,200	47,000
1969	415,000	8,200	96,000	519,200	234,000	753,000	1,976,200	40,000
1970	401,300	10,300	211,500	623,100	185,800	808,900	2,113,100	45,000
1971	590,100	10,000	182,900	783,000	357,700	1,140,700	2,106,600	42,000
1972	547,800	20,400	215,800	784,000	445,400	1,229,400	2,405,200	45,300
1973	561,400	46,500	609,100	1,217,000	585,800	1,802,900	4,453,900	62,800
1974	881,300	28,400	1,011,300	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	589,000	3,500	1,201,400	1,793,900	596,600	2,390,500	4,939,700	87,100
1976	983,500	8,600	1,158,900	2,151,000	687,600	2,838,600	6,815,500	96,900
1977	1,928,400	143,000	1,997,300	4,068,700	850,000	4,918,700	10,499,400	151,000
1978	2,133,700	79,200	3,101,800	5,314,700	1,085,700	6,400,400	14,194,800	179,400
1979	3,008,000	84,400	4,527,100	7,619,500	1,210,000	8,829,500	19,048,800	248,600
1980	3,517,800	19,400	2,255,600	5,792,800			14,482,500	

Preliminary

1/ Information not available for wages earned during 1961-1966.

2/ Includes wages paid to tender boat operators and resident processing plant employees in district.

3/ Based on type of processing when fish were shipped out of the district.

4/ Processors tax and vessel and crewmember licenses fees. Does not include CFEC permit fee.

Appendix Table 14. Estimated average prices paid to fishermen, Yukon district, 1961-1979. 1/

PRICE PER FISH

	Lower Yukon Area				Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1961	$3.50							
1962	3.50							
1963	3.50							
1964	3.75		.25	.50				
1965	4.50		.35					
1966	4.50		.35	.50				
1967	4.50	.35	.35	.50				
1968	4.64	.50	.50	.50				
1969	4.60	.50	.50	.55				
1970	5.00	.61	.61	.84				
1971	5.34	.64	.64	.82				
1972	5.90	.75	.75	.92				
1973	7.45	1.18	1.18	1.27				
1974	9.00	1.36	1.58	1.75	8.67	1.00	1.00	1.00
1975	9.24	1.30	1.50	1.51	16.25	1.12	1.12	1.12
1976	11.17	1.56	1.80	1.78	12.96	1.22	1.22	1.22
1977	20.32	2.80	3.60	3.75	24.17	1.75	1.75	1.75
1978	21.60	3.20	3.62	4.20	15.38	1.54	1.97	1.97
1979	22.74	3.87	5.05	5.87	20.20	1.65	2.24	2.24
1980	23.41	1.38	1.93	2.32				

PRICE PER POUND

	Lower Yukon Area				Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1964	.17		.03					
1965	.20							
1966	.20							
1967	.19	.05	.05	.07				
1968	.18	.06	.06					
1969	.19	.08	.08	.08				
1970	.22	.09	.09	.12				
1971	.24	.10	.10	.12				
1972	.24	.11	.11	.13				
1973	.30	.16	.16	.18				
1974	.38	.21	.21	.25	.50	.15	.13	.15
1975	.42	.20	.20	.21	.92	.17	.14	.17
1976	.51	.24	.24	.27	.74	.19	.16	.19
1977	.85	.40	.45	.50	1.37	.27	.22	.27
1978	.90	.45	.47	.60	.87	.24	.25	.24
1979	1.09	.52	.68	.80	1.00	.25	.29	.25
1980	1.04	.20	.28	.36				

1/ Information not available for some species.

Appendix Table 15. Average weights and numbers of salmon per case, Yukon district, 1962-1979. 1/

	Mean round weight in pounds 2/			Mean no. of fish/case 3/		
Year	King	Coho	Chum	King	Coho	Chum
1962				3.2	13.3	10.5
1963						
1964	22.6		8.0	3.4		
1965	23.0		6.6	3.3		
1966	23.0		6.9	3.5		
1967	24.0	7.3	7.0	3.2		
1968	26.5		8.3	3.3		11.0
1969	23.9	6.7	6.5	3.4	10.0	12.0
1970	22.3	7.1	6.7	3.7	10.6	11.7
1971	22.6	6.9	6.4	3.3	10.3	12.4
1972	24.6	7.1	6.8	3.2	10.1	11.8
1973	24.5	7.1	7.4	3.1	10.5	10.8
1974	23.4	7.1	6.7	3.4	10.5	11.7
1975	22.0	7.2	6.8	3.8	10.4	11.6
1976	21.7	6.8	6.8			
1977	23.3	7.7	7.2			
1978	23.8	7.1	7.1			
1979	20.7	7.2	7.2			
1980 *	22.5	6.4	7.0			

* - Lw. Yuk only

1/ Information is not available for some species.
2/ Based on age-length-weight samples or fish ticket entries.
3/ Standard 48 lb. case.

Appendix Table 16. Yukon River comparative subsistence catch and effort data, 1961-1979 (numbers per fishing family are in parenthesis).

Year	Total Catch		Equivalent Catch 1/		Mean Equivalent Catch per Family 1/	
	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/
1961	31,864	405,632	20,117	403,765	32	647
1962	21,610	356,754	10,217	325,244	18	577
1963	32,790	408,381	23,919	376,440	40	625
1964	22,877	485,630	14,847	458,609	25	762
1965	19,723	458,379	16,499	430,949	30	788
1966	14,272	214,236	11,507	204,913	23	416
1967	19,661	288,595	16,306	256,956	35	546
1968	15,006	189,607	11,883	170,552	25	358
1969	15,000	213,725	13,916	195,476	30	426
1970	15,794	223,237	13,474	199,163	34	498
1971	27,953	228,849	24,058	191,011	48	383
1972	21,868	151,008	19,314	129,343	46	311
1973	26,459	219,275	23,530	198,054	44	374
1974	23,137	323,834	19,014	284,977	38	580
1975	15,466	300,379	12,600	262,741	21	448
1976	19,329	262,624	16,196	235,056	25	358
1977	20,388	267,127	15,740	235,401	27	408
1978	30,297	299,791	25,496	255,447	36	360
1979	35,205	452,328	26,616	315,661	33	387

Year	Fishing Families surveyed		People in fishing families 1/	Snowmachines 1/	Sled dogs 1/	Gear operated 1/ Gill nets	Fishwheels
1961	624	587	3,626 (5.8)		4,806 (7.7)	577	169
1962	564		3,279 (5.8)		3,848 (6.8)	613	138
1963	602		4,154 (6.9)		4,214 (7.0)	716	156
1964	602		3,612 (6.0)		4,003 (6.6)	840	155
1965	547		3,993 (7.3)		3,993 (7.3)	645	127
1966	492		3,149 (6.4)		3,112 (6.3)	582	116
1967	471		2,779 (5.9)	192 (0.4)	2,752 (5.8)	530	86
1968	476		3,094 (6.5)	262 (0.6)	2,719 (5.7)	565	71
1969	459		2,984 (6.5)	349 (0.8)	2,448 (5.3)	930	63
1970	400		2,680 (6.7)	346 (0.9)	2,214 (5.5)	647	55
1971	499		3,244 (6.5)	460 (0.9)	2,226 (4.5)	795	63
1972	416		2,621 (6.3)	438 (1.0)	1,589 (3.8)	755	59
1973	530		3,339 (6.3)	571 (1.1)	2,375 (4.5)	991	83
1974	491		3,093 (6.3)	534 (1.1)	2,105 (4.3)	668	90
1975	587	669	3,698 (6.3)	762 (1.3)	2,585 (4.4)	1,119	126
1976	657		4,139 (6.3)	882 (1.3)	3,401 (5.2)	1,071	154
1977	577		3,635 (7.3)	785 (1.4)	3,413 (5.9)	755	164
1978	711		3,929 (5.5)	843 (1.2)	3,722 (5.2)	943	178
1979	815		4,386 (5.3)	914 (1.1)	4,623 (5.7)	1,324	179

1/ Data from villages surveyed each year since 1961: Mouth to Fort Yukon and Tanana River (does not include Fairbanks or Shageluk).
2/ Mostly chum salmon, some pinks and cohos.

Appendix Table 17. Comparative Yukon River king salmon subsistence catches by village, 1961-1979.

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Mouth to [redacted] River																			
Sheldon [redacted]	180	116 1/	921 1/	52	49	127	755	[redacted]	728	1,093	882	462	165	283	108	122	302	[redacted]	91
Alakanuk	165	53	81	87	177	263	287	[redacted]	852	589	1,116	647	461	569	130	363	213	[redacted]	893
Emmonak-Kwiguk	137	21	120	63	145	160	541	42	810	151	627	300	1,071	208	55	398	62	2,738	1,362
Aproka Pass & vicinity	179	181	293	73	281	645	959	147	238	23	42	37	106	5	0	-	-	64	-
Kotlik-Hamilton	111	35	195	53	131	47	162	53	551	394	328	342	1,008	394	204	472	173	773	533
Subtotal	772	406	1,610	328	783	1,242	2,704	477	3,179	2,250	2,995	1,788	2,811	1,459	497	1,355	750	5,246	2,879
Anuk River to Owl Slough																			
Mountain Village	1,110	619	2,427	985	510	217	1,345	238	557	348	2,036	932	912	460	394	397	172	817	1,025
Pitkas Point - St. Marys	1,810	391	1,254	521	826	499	993	168	737	575	1,915	1,517	1,270	878	438	1,273	576	1,314	1,718
Pilot Station	753	219	801	237	502	440	1,534	784	367	647	1,400	1,558	1,508	517	107	502	556	1,027	804
Marshall	1,265	503	2,012	290	942	350	306	365	564	598	985	713	1,163	1,068	436	694	364	806	721
Subtotal	4,938	1,732	6,494	2,093	2,780	1,506	4,178	1,555	2,225	2,168	6,336	4,720	4,853	2,923	1,375	2,866	1,668	3,964	4,268
Owl Slough to Bonasila R.																			
Russian Mission	1,563	641	1,392	1,185	1,393	800	2,019	2,170	707	993	839	975	1,387	1,243	2,098	1,328	639	1,498	1,476
Holy Cross	2,648	1,111	3,123	2,243	2,351	2,645	2,876	1,418	1,877	1,678	3,032	2,359	3,708	2,243	2,792	1,492	1,920	2,404	1,787
Subtotal	4,211	1,752	4,515	3,428	3,744	3,445	4,895	3,588	2,584	2,671	3,871	3,334	5,095	3,486	4,890	2,820	2,559	3,902	3,263
Bonasila R. to Illinois Cr.																			
Anvik	22	51 2/	163 2/	153	118	144	54	114	71	67	152	72	67	111	83	84	67	180	261
Grayling	25 2/	37 2/	197 2/	124	246	85	199	208	187	155	416	185	516	547	100	117 2/	149	292	391
Kaltag	33	224	102	330	57	47	199	60	232	124	154	83	148	616	192	57	216	127	435
Nulato	513	171	835	355	305	218	578	209	771	734	470	364	307	1,161	1,119	968	1,531	1,354	1,245
Koyukuk	483	423	629	209	228	93	262	398	357	30	410	417	564	604	50	437	752	518	495
Galena	626	123	282	158	260	407	210	456	263	313	574	608	510	706	1,294	435	1,155	945	1,591
Ruby-Kokrines	1,060	226	1,514	2,555	1,843	887	820	881	1,619	1,313	2,465	2,076	2,418	2,899	912	1,959	735	1,539	2,221
Subtotal	2,762	1,255	3,722	3,884	3,057	1,881	2,322	2,326	3,500	2,736	4,641	3,805	4,530	6,644	3,750	4,057	4,605	4,955	6,639
Illinois Cr. to U.S. Can. Border																			
Tanana	2,379	332	1,414	329	524	421	151	627	683	361	428	1,461	965	789	80	1,338	858	1,851	1,604
Rampart	605	1,438	1,231	990	1,041	869	368	922	321	150	1,190	1,457	2,614 3/	452 3/	517	581	1,194	987	1,820
Stevens Village	650	831	1,073	325	910	620	534	787	350	851	750	1,002 3/7/	1,027 3/	590 3/	362	643 7/	1,252 7/	3,178	2,194 7/
Beaver	185	442	491	710	480	31	210	495	458	773	777	241	358	34	168	188	299	558	394
Fort Yukon	2,958	1,822	2,831	2,098	2,747	1,074	692	632	75	1,019	706	520	536	1,030	215	1,158	1,061	2,642	1,922
Circle	496	393	250	1,200	-	-	-	-	-	-	666	345	225	406	15	528	304	212	1,175
Eagle	875	400	500	17	100	-	-	-	-	-	111	353	421	66	20	633	1,171	963	2,888
Subtotal	8,148	5,658	7,790	5,669	5,802	3,015	1,955	3,463	1,887	3,154	4,628	5,379	6,146	3,367	1,377	5,069	6,129	10,391	11,997
Innoko River																			
Shageluk																11	-	-	62
Holikachuk																			
Subtotal																11	-	-	62
Koyukuk River																			
Huslia	-	100	32	112	9	-	7	35	16	12	5	1	35	69	23	21	50	132	146
Hughes	-	-	47	18	-	-	65	82	10	116	378	27	32	10	25	155	72	216	180
Alatna	-	-	-	-	-	-	-	1	8	2	0	3	1	17	0	0	1	7	2
Allakaket	-	-	85	-	-	-	70	3	15	128	268	25	73	138	151	231	172	239	236
Subtotal	-	100	164	130	9	-	142	121	49	258	651	56	141	234	199	407	295	594	564
Tanana River																			
Minto-Manley Hot Springs	347	92	325	468	276	146	-	12	76	138	7	99	58	176	213	326	752	298	269
Nenana	310	115	213	194	157	272	252	462	465	357	2,357	887	683	1,431	533	864	742	807	800
Fairbanks	-	-	-	-	-	-	-	-	-	132	98	190	26	38	32	31	67	126	264
Subtotal	657	207	538	662	433	418	252	474	541	627	2,462	1,176	767	1,645	778	1,221	1,561	1,231	1,333
Chandalar River																			
Venetie	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9	0
Subtotal	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9	0
Porcupine River																			
Canyon Village	-	-	17	35	-	-	-	-	-	-	-								
Chalkytsi & Kevinjik R. Fish Camp	-	-	2	2	-	-	-	-	-	-	-								
Old Crow, Y.T.	-	-	44	-	94	65	43	28	27	8	9	-	20	100	100	23	29	-	0
Subtotal	-	-	63	37	94	65	43	28	27	8	9	-	20	100	100	23	29	-	0
Yukon Territory Villages 5/																			
Dawson	2,231	2,000	1,500	3,476	351	50	50	100	-	40	-	-	-	-	-	500	531	421	1,200
Stewart River	-	-	-	-	-	-	-	100	-	30	-	100	99	-	-	-	-		
Mayo-Stewart Crossing	-	300	250	150	400	100	30	-	-	-	250	-	25	233	-	-	61	105	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-
Burwash-Kluane R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fort Selkirk	-	-	-	-	100	125	400	200	22	11	-	-	45	-	-	-	-	-	-
Pelly	-	2,000 4/	2,000 4/	1,000	300	350	600	600	200	450	450	380	53	433	-	200	265	500	-
Faro	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-	-	-
Ross River	-	500	600	-	500	120	150	200	-	120	-	35	75	30	-	-	-	-	-
Minto	-	-	-	600	170	350	-	100	-	-	-	15	261	-	-	-	-	-	-
Tatchun Creek	-	-	-	-	150	-	250	100	100	60	-	-	-	-	-	-	-	-	-
Carmacks	-	3,000	2,500	700	600	1,050	1,450	1,200	450	700	1,400	1,080	1,384	2,563	-	800	1,121	1,280	3,000
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	20	180	-	-	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Teslin-Johnson's Crossing	-	1,000	900	720	450	300	200	200	175	605	80	-	54	20	-	-	800	600	-
Subtotal	10,376	10,500	7,750	6,646	3,021	2,635	3,170	2,872	973	2,092	2,791	1,647	2,096	3,279	2,900 6/	1,500	2,778	2,906	4,200
Total:	31,864	21,610	32,970	22,877	19,723	14,272	19,661	15,006	15,000	15,974	28,384	21,905	26,459	23,137	15,866	19,329	20,374	30,297	35,205

1/ Includes Black River catches. 2/ Includes Shageluk-Holikachuk fish camp catches. 3/ Includes New Minto fish camp catches.
4/ Includes Minto catches. 5/ Data by village obtained from annual reports. Subtotals includes revised catch data and summation of village catches may not equal subtotals. 6/ Catch by village not available.
7/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossing.

Appendix Table 18. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1979. 7/

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Mouth to Anuik River																			
Sheldon's Point	12,683	10,899 1/	32,577 1/	8,701	10,884	3,007	2,757	8,693	5,573	4,238	4,355	4,355	3,554	2,720	6,247	2,033	1,327	3,420	2,177
Alakanuk	8,932	5,747	17,953	11,333	21,473	9,830	9,964	14,184	15,806	10,994	7,895	5,696	6,551	12,743	3,656	10,866	6,591	9,583	11,252
Emmonak-Kwiguk	15,670	9,074	27,749	16,954	47,386	11,824	15,314	16,569	12,836	7,265	5,087	4,828	10,135	7,388	5,336	8,397	7,501	9,826	12,634
Apoka Pass & Vicinity	8,409	6,071	8,915	7,712	20,129	10,741	7,910	4,853	4,048	565	559	344	580	1,460	229	231	25	473	-
Kotlik-Hamilton	3,931	5,362	9,942	4,076	4,728	3,003	7,251	1,709	6,391	4,878	4,682	3,976	7,639	6,098	6,578	10,289	7,152	9,127	9,053
Subtotal	49,805	37,153	97,136	48,776	104,600	38,405	43,196	46,008	44,654	27,940	22,578	18,398	27,625	33,936	17,258	31,816	22,596	32,429	35,116
Anuik River to Owl Slough																			
Mountain Village	7,373	8,331	10,106	13,593	11,475	7,548	8,305	7,312	10,676	4,865	8,214	5,909	7,524	11,661	6,720	8,278	11,368	6,920	13,304
Pitkas Point - St. Marys	8,771	10,510	7,001	12,508	14,130	8,460	9,790	9,166	11,586	14,604	13,533	11,072	9,201	14,478	8,644	12,060	12,347	10,097	12,275
Pilot Station	5,605	13,926	5,553	10,776	7,865	5,587	6,520	4,770	7,515	5,882	4,171	7,026	8,474	8,567	7,849	5,498	5,708	4,000	6,489
Marshall	5,992	6,595	8,023	10,125	6,631	3,640	3,070	3,530	6,606	4,910	6,154	5,174	4,934	6,763	5,710	3,938	2,896	2,562	7,002
Subtotal	27,741	39,362	30,683	47,002	40,101	25,235	27,685	24,778	36,383	30,261	32,072	29,181	30,133	41,469	28,923	29,774	32,319	23,579	39,070
Owl Slough to Bonasila R.																			
Russian Mission	4,098	9,994	5,354	10,069	4,888	2,707	4,897	3,836	3,668	3,114	2,378	2,919	2,459	4,740	4,113	2,407	2,262	1,256	1,927
Holy Cross	21,144	20,424	12,532	31,447	25,709	4,228	22,341	10,309	6,037	4,188	2,387	3,421	3,532	4,611	4,691	1,546	5,404	939	3,474
Subtotal	25,242	30,418	17,886	41,516	30,597	6,935	27,238	14,145	9,705	7,302	4,765	6,340	5,991	9,351	8,804	3,953	7,666	2,195	5,401
Bonasila R. to Illinois Cr.																			
Anvik	61,406 2/	43,404 2/	28,064 2/	34,341	37,179	14,239	20,793	10,020	8,925	9,924	8,121	3,689	20,850	29,261	30,924	26,660 2/	23,847	16,021	14,950
Grayling	56,284	32,737	18,358	23,784	36,436	11,437	22,852	8,225	18,037	12,548	6,900	6,428	12,778	27,421	26,476	27,500 2/	17,102	18,824	20,630
Kaltag	23,395	25,824	23,193	35,961	29,382	21,729	27,028	12,090	9,942	12,465	10,662	4,285	23,135	14,920	11,699	13,106	16,588	19,291	31,424
Nulato	63,163	27,948	31,742	62,446	43,988	22,017	22,521	13,242	23,853	26,456	18,369	7,648	13,568	37,312	22,552	13,253	12,065	9,056	11,336
Koyukuk	13,544	6,282	7,966	36,167	11,232	7,443	4,613	3,541	3,359	3,789	3,125	1,772	1,964	14,978	5,667	2,440	3,946	5,268	10,133
Galena	10,585	1,673	6,731	3,100	2,741	8,296	2,650	1,079	2,422	3,179	2,015	1,353	4,612	8,307	11,500	13,435	5,527	11,945	6,815
Ruby-Kokrines	15,654	18,243	15,585	30,122	17,603	5,530	10,690	2,382	5,201	8,068	13,356	6,725	12,932	19,235	8,820	10,777	4,349	14,709	16,731
Subtotal	244,031	156,111	131,639	225,921	178,561	90,691	111,147	50,579	71,739	76,429	62,548	31,900	89,839	151,434	117,638	107,171	83,424	95,124	112,019
Illinois Cr. to U.S.-Canadian Border																			
Tanana	12,775	7,245	16,646	15,348	14,885	10,421	11,938	13,406	12,455	23,017	25,273	13,108	10,795	12,447	26,342	21,592	19,790	22,683	39,218
Rampart	11,722	6,962	11,209	14,963	13,462	4,056	15,763	2,636	8,935	5,252	11,435	3,674 3/	8,986 3/	1,527 3/	8,117	14,175	10,056	2,771	25,010
Stevens Village	3,490	4,355	8,247	6,979	7,346	1,900	3,145	2,022	2,725	8,292	7,957	1,118 3/	6,078 3/	6,728 3/	2,297	1,170 9/	4,926 9/	16,460	12,413 9/
Beaver	2,975	2,334	12,119	11,359	3,274	4,135	4,292	3,619	1,965	2,378	1,870	3,157	1,372	1,583	1,270	517	716	1,717	1,826
Fort Yukon	13,252	10,255	31,219	19,407	19,402	3,960	8,983	6,564	3,338	6,354	3,498	1,597	3,074	142	19,458	1,143	13,630	21,580	22,266
Circle	992	800	100	2,300	-	-	-	-	-	-	2,940	752	592	1,266	1,283	153	203	859	3,541
Eagle	150	100	125	1,582	256	-	-	-	-	-	490	587	2,109	66	1,825	1,141	7,432	5,027	27,048
Subtotal	45,356	32,051	79,665	71,938	58,625	24,472	44,121	28,247	29,418	45,293	53,463	23,993	33,006	23,759	60,592	39,891	56,753	71,097	131,322
Innoko River																			
Shageluk		3,500														1,577			6,647
Holikachuk		100																	
Subtotal		3,600														1,577			6,647
Koyukuk River																			
Huslia	-	16,000	5,455	13,913	5,101	-	5,489	3,677	2,466	4,018	1,468	534	4,482	6,601	5,026	8,791	3,753	8,656	21,255
Hughes	-	-	767	559	-	-	5,837	2,237	3,112	6,367	16,902	2,777	2,541	8,786	5,429	4,280	4,856	6,555	12,865
Alatna	-	-	-	-	-	-	170	99	830	1,226	609	490	27	3,510	950	650	210	681	104
Allakaket	-	-	1,972	-	-	-	3,929	1,391	3,254	7,759	8,773	867	2,465	7,034	5,609	4,215	3,686	9,833	8,505
Subtotal	-	16,000	8,194	14,472	5,101	-	15,425	7,404	9,662	19,370	27,752	4,668	9,515	25,931	17,014	17,936	12,505	25,725	43,229

Appendix Table 18. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1977. (continued)

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Tanana River																			
Minto-Manley Hot Springs	6,486	17,228	15,493	17,628	11,358	7,152	22	740	330	540	8	6	7	20	6,000	9,400	16,192	15,494	22,213
Nenana	6,426	13,821	13,599	11,129	7,363	12,023	3,517	6,055	3,247	11,398	19,007	20,864	14,154	26,340	26,634	14,345	24,167	27,625	33,525
Fairbanks	-	-	-	-	-	-	-	-	-	1,072	5,655	8,608	1,657	2,958	1,615	2,826	725	3,917	6,843
Subtotal	12,912	31,049	29,092	28,757	18,721	19,175	3,539	6,795	3,577	13,010	24,670	29,478	15,818	29,318	34,249	26,571	41,084	47,036	62,581
Chandalar River																			
Venetie	-	1,000	200	-	9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660	2,606	3,943
Subtotal	-	1,000	200	-	9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660	2,606	3,943
Porcupine River																			
Canyon Village	-	210	1,566	2,316	1,531												600		
Chalkytsik	-	500	64	742	1,438														
Old Crow, Y.T.	-	2,800	20,000	-	7,535	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	5,592	5,000	11,000
Subtotal		3,510	21,630	3,058	10,504	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	6,192	5,000	11,000
Yukon Territory Villages 5/																			
Dawson	725	3,000	1,500	3,331		50	50	50		60								428	2,000
Stewart River																			
Mayo-Stewart Crossing																			
Fraser Falls							250	200	760		100		199	32					
Burwash-Kluane R.					1,000	450	1,000	500	500	500		2,000							
Fort Selkirk		1,500 4/	1,500 4/		100			50	300					14		100	650		
Pelly																		132	
Faro													327						
Ross River				600	623	450	50	100	100										
Minto													487	1,590		200	780	350	
Tatchun Creek		2,000	2,500	250	260	100	500	200	400	50									
Carmacks																			
Lake Laberge-Whitehorse																			
Takhini																			
McClintock R.																			
Carcross										2									
Teslin-Johnson's Crossing																			
Subtotal	5,800	6,500	5,500	4,181	2,265	1,425	1,832	1,100	2,089	580	13,900	3,000	1,111	1,636	6,500 8/	800	2,929	1,210	2,000
Total:	412,889 6/	358,441 6/	421,625	485,621	458,931	214,611	288,577	189,607	213,754	223,205	214,368	151,008	219,275	323,834	300,379	262,622	267 127	299,791	462,328

1/ Includes Black River catches.

2/ Includes Shageluk-Holkachuk fish camp catches.

3/ Includes Fairbanks fish camp catches.

4/ Includes Minto catches

5/ Data by village obtained from annual reports. Subtotals include revised catch data and summation of village catches may not equal subtotal

6/ Includes pinks and cohos not provided in breakdown of catch by village data.

7/ Includes small numbers of pink and coho salmon.

8/ Catch by village not available.

9/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossings.

Appendix Table 19. Comparative Yukon River drainage king salmon escapement estimates, 1959-1979 1/

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Andreafsky River																						
East Fork		1,020	1,003	675 2/		867		361		380	231 2/	665	1,904	798	825		993	818	2,008	2,487	1,180	958 3/
West Fork		1,220		762 2/		705	355 2/	303	276 2/	383	274 2/	574 2/	1,284	582 2/	788	285	421	643	1,499	1,062	1,134	1,500
Total		2,240		1,437		1,572		664		763	505	1,239	3,188	1,380	1,613		1,414	1,461	3,507	3,549	2,314	2,458
Anvik River Drainage																						
Tower Count														1,104	517	471 3/	548	958	1,261	1,844	1,237	—
Below Tower Site (includes tributaries)														68	96 2/		172 3/	198 3/4/	93	240	237	87
Above Tower Site (includes tributaries)														346	126 2/		190	98	-	-	-	1,243
Subtotal		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		414	222 2/		362	296	93	240	237	—
Total (Best estimate of escapements, combined tower, aerial and boat surveys).		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		1,172	613	471	720	1,155	1,354	1,281	1,474	1,330
Nulato River																						
North Fork (including main river)		483	376													55	123	471	286	498	1,093	954
South Fork		273	167													23	81	177	201	422	414	369
Total		756	543													78	204	648	487	920	1,507	1,323
Gisasa River		300	266 2/													161	385	332	255	45	484	951
Tozitna River		106 2/															202	42 2/	123	194	-	257
Chena River		132			137								193 2/ 3/	138 2/3/	21	1,035 3/	316 3/	531	563	1,726	1,159	2,541
Salcha River		1,660	2,878	937		450	408	800		735	461 2/	1,882	152 2/	1,193	249	1,857	1,055	1,691	1,202	3,499	4,789	6,757
Tatchun Creek												100 2/	100	97		192	175	52	150	200	150	100
Nisutlin River (Sidney Creek-100 Mile Cr.)										407	105	615	848	317	36 2/	48 2/	249	302	77	375	713	975
												625	856	392	228	273	313	121	277	725	1,184	1,311
Whitehorse Dam (Fishway Counts)	1,054	650	1,068	1,500	484	587	903	563	533	407	334											

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
2/ Incomplete or poor survey conditions resulting in a very minimal count.
3/ Boat survey.
4/ Also includes 94 kings observed in Yellow River.
5/ Foot survey.

Appendix Table 20. Comparative Yukon River drainage summer chum salmon escapement estimates, 1958- 1979 1/

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Andreafsky River																						
East Fork			3,830	8,110	18,040		12,010	14,670 2/	25,619	14,495 4/	17,600 4/	119,000	84,090	98,095	41,460	10,149 2/	3,215 2/	223,485	105,347	112,722	127,050	66,471
West Fork					19,530				18,145		74,600 4/	159,500	91,710 2/	71,745	25,573	51,835	33,258	235,954	118,420	63,120	57,321	43,391
Total					37,570				43,764		92,200	278,500	175,800	169,840	67,033			459,439	223,767	175,842	184,371	109,862
															108,342	71,475	201,277	601,880	237,851	162,514	166,102	37,467
Anvik River Drainage																						
Tower Count															137,515	15,190		211,130	168,315	100,240	85,237	280,537 6/
Below Tower Site (includes tributaries)															74,118	10,966		634,355	243,695	-	-	84,620
Above Tower Site (includes tributaries)	100-200,000	200,000	11,100		20,600		12-14,000 2/	100,000	37,500	116,000	51,580 2/		232,780		208,763	26,156		845,485	412,010	100,240	85,237	-
Subtotal																						
Total (Best estimate of escapement combined tower, aerial & boat surveys)	100-200,000	200,000	11,100		20,600		12-14,000 2/	100,000	37,500	116,000	51,580 2/		232,780		245,857	86,665		845,485	406,166	262,754	251,339	280,537 6/
																	16,137	25,335	38,258	16,118	17,845	-
Rodo River		3,000	3,483														22,144	87,280	39,690	58,275	41,659	35,598
Nuiato River	50,000																29,016	51,215	9,230	11,385	12,821	1,506
North Fork (including main river)																	51,160	138,495	48,920	69,660	54,480	37,104
South Fork	2,500																22,022	56,904	21,342	2,204	9,280	10,962
Total	52,500																					
Gisasa River (Koyukuk R. Drainage)						400												7,610	9,356	6,437	2,716	5,132
Hogatza River (Koyukuk R. Drainage)																		14,745	10,188	4,297	2,386	9,089
Clear Creek																		22,355	19,544	10,734	5,102	14,221
Caribou Creek																	1,823	3,512	725 2/	761	2,262	-
Total																						
Tozitna River														670	79		4,350 3/	2,702 3/	685	610	1,609	1,025
Chena River					469 3/	898																
Salcha River	670				1,152	1,161	250 2/	2,375	2,200		3,790	425 2/	7,879	306 2/	947 2/	290	8,040 5/	7,573	6,474	677	5,405	3,060

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
2/ Incomplete or poor survey conditions resulting in a very minimal count.
3/ Boat survey.
4/ Includes pink salmon.
5/ Combined aerial and boat surveys.
6/ Includes estimate from side scan sonar located mainstem lower Anvik River downstream of Beaver River mouth.

Appendix Table 21. Comparative Yukon River drainage fall chum salmon aerial survey escapement estimates, 1971-1979 1/

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1986
TANANA RIVER DRAINAGE										
Bear Paw River	-	-	1,530	2,996	1,657	-	-	-	-	
Toklat River drainage										
Upper Toklat River 3/	-	1,000 2/	6,957	34,310	42,418	35,224	25,000	35,000	107,593 8/	23,054
Lower Toklat River	-	-	-	-	35,867	2,000 2/	-	-	64,540	2,140
Subtotal Toklat R. drainage			6,957	34,310	78,285	37,224	25,000	35,000	172,133	25,194
UPPER TANANA RIVER DRAINAGE										
Benchmark #735 Slough	-	5,255	127 2/	1,450	-	336	1,270	1,705	2,714	1,115
Delta River	-	3,650	7,971	4,010	3,946 7/	5,526	17,925	10,051	8,125	4,637
Upper Tanana River 4/	-	8,350	5,635	4,567	-	4,979	3,725	5,700	20,820	3,444
Bluff Cabin Slough	-	6,040	3,450	4,840	5,000 2/	3,197	6,491	5,340	6,875	3,190
Delta Clearwater Slough (1 Mile Slough)	-	-	1,720	1,235	745 2/	1,552	1,900	475	3,850	885
Subtotal Upper Tanana R. drainage		23,295	18,903	16,102	9,691	15,590	31,311	23,271	42,384	13,271
CHANDALAR RIVER	-	-	-	17,455	6,345 2/	58 2/	4,183	-	-	2,988
PORCUPINE RIVER DRAINAGE										
Sheenjek River	-	-	1,175	40,507	78,060	12,023	20,506	14,610	41,140	13,027
Fishing Branch River (Yukon Terr.)	250,300,000	35,125 5/	15,987 6/	32,525 6/	353,282 6/	13,450	32,500	15,000	44,080	20,319
Subtotal Porcupine R. drainage	250-300,000	35,125	17,162	73,032	431,342	25,473	53,006	29,610	85,220	33,346
TOTAL	250-300,000	59,420	44,552	143,895	527,320	78,345	113,500	87,881	299,737	74,799

1/ All surveys rated fair-good unless rated otherwise. Only peak estimates listed.
2/ Poor or incomplete survey; very minimal and/or rough estimate.
3/ Includes following areas: Toklat River in vicinity of roadhouse, Shushana River and Geiger Creek.
4/ Richardson Highway Bridge to Blue Creek.
5/ Combined tagging population estimate and weir count.
6/ Weir count.
7/ Foot survey.
8/ Combined aerial and ground survey estimates.

Appendix Table 22. Comparative Yukon River drainage coho salmon aerial survey escapement estimates, 1971-1979 1/

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Nenana River drainage										
Lost Slough										
East Bank 1 mile below Anderson	-	-	-	900	116	118	524	350	227	499
East Bank 3 miles below Anderson	-	-	-	488	827	-	-	-	-	
Wood Creek	-	-	-	-	-	-	310	-	-	
Clear Creek	-	-	-	-	-	13	-	-	-	
Seventeen Mile Slough	-	-	-	27	956	229	1,167	466	1,987	592
Subtotal Nenana R. drainage	-	-	-	1,415	1,899	360	2,001	816	2,214	1,091
Delta Clearwater River	3,000	632 3/	1,982	3,950	5,100 3/	1,920	4,793 3/	4,798 3/	8,970 3/	3,936
Clearwater Lake and Outlet	-	417	249 2/	560	1,530	460 3/	730 3/	570 3/	1,015 3/	1,545 3/
Richardson Clearwater River	-	527 2/	175	235	4 2/	80 2/	327	-	372	611

1/ Peak estimates presented only
2/ Poor or incomplete survey
3/ Boat survey by Sport Fish Division

Appendix Table 23. Western Alaska king salmon catch compared to Japanese mothership catch in the Bering Sea, 1960-1979. 1/

	Yukon River Drainage 2/	A-Y-K Region 3/	Total Western Alaska 4/	Japanese Mothership Bering Sea
1960	78,647	93,017	220,031	142,000
1961	155,570	201,358	295,514	10,000
1962	120,381	156,413	245,960	-
1963	152,247	209,456	279,426	42,000
1964	119,672	171,070	317,598	204,000
1965	140,086	189,888	314,086	116,000
1966	109,529	184,268	275,496	122,000
1967	151,554	243,328	370,244	70,000
1968	123,744	201,319	316,727	293,000
1969	106,863	214,606	351,832	450,000
1970	98,854	235,510	386,689	404,000
1971	142,169	229,379	362,456	157,000
1972	116,524	216,428	294,098	220,000
1973	103,657	193,069	252,992	32,000
1974	123,476	177,988	241,397	234,000
1975	82,785	161,909	198,627	200,000
1976	111,477	221,680	334,922	126,000
1977	121,422	243,187	387,687	54,000
1978	130,874	243,450	427,695	12,000
1979 5/	160,061	279,209	509,109	72,000

1/ Catch data presented in numbers of fish.

2/ Commercial and subsistence catch data combined (includes Canadian catches).

3/ Commercial and subsistence catch data combined.

4/ Combined commercial and subsistence catches of AYK region and Bristol Bay area plus North Alaska Penninsula commercial catches.

5/ Preliminary data.

Attachment 1. List of Yukon area emergency orders issued, 1979.

NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-Y-01-79	May 17	Change weekly fishing schedule in subdistrict 6 to provide uniform fishing period openings and closures during the season.	Necessary to minimize confusion amoung fishermen. Total allowable fishing time is unchanged.
3-Y-02-79	June 3	Open the commercial salmon fishing season in subdistricts 1 and 2 for special 24 fishing periods prior to normal June 10 season opening.	Action taken because of a strong early run of kings entering the lower river.
3-Y-03-79	June 17	Closure of commercial salmon fishing season in subdistrict 3.	The 1,800-2,200 king salmon guideline harvest level was taken.
3-Y-04-79	June 20	Reduce fishing time from 2-1/2 to 2 days a week in subdistricts 1 and 2.	Action taken to provide for more balanced harvests and escapements of king and summer chum salmon.
3-Y-05-79	June 24	Specify that only gillnets of 6 inch or less size may be used in subdistricts 1 and 2.	Action taken to allow harvest of the more abundant summer chums and minimize catch of the late run of kings.
3-Y-06-79	June 25	Reopen the commercial salmon fishing season, specify that only gillnets of 6 inch or less mesh size may be used and provide for a three day a week fishing schedule in subdistrict 3.	Action taken to allow harvest of the more abundant summer chums and minimize the catch of the late king run.
3- Y-07-79	July 3	Increase fishing time from 2 to 2-1/2 days per week in subdistrict 1 and 2.	Action to allow optimum harvest of the summer chum run.
3-Y-08-79	July 9	Specify that only gillnets of 6 inch or less mesh size may be used in subdistrict 4.	Action taken to allow continued harvest of summer chums and to minimize the catch of king salmon which have exceeded the upper end of the guideline harvest level.
3-Y-09-79	July 12	Closure of commercial salmon fishing season in subdistrict 5.	The 2,700-3,300 king salmon guideline harvest level taken.

Attachment 1. List of Yukon area emergency orders issued, 1979. (Continued)

NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-Y-10-79	August 2	Reopen commercial salmon fishing season in subdistrict 5.	The majority of the king salmon run has passed through the area and fall chum salmon are present in harvestable numbers.
3-Y-11-79	August 10	Closure of commercial salmon fishing season in subdistrict 6.	Closure necessary until such time that fall chums are well distributed in the Tanana River at which time the season will reopen.
3-Y-12-79	August 13	Closure of commercial salmon fishing season in subdistricts 1, 2, and 3.	The upper end of the 120,000-220,000 guideline harvest level of fall chum salmon will be exceeded.
3-Y-13-79	September 2	Closure of commercial salmon fishing season in subdistrict 5.	The upper end of the 10,000-40,000 guideline harvest level of fall chum and coho salmon will be exceeded.
3-Y-14-79	September 7	Closure of commercial salmon fishing season in subdistrict 4.	The upper end of the 10,000-40,000 guideline harvest level of fall and coho salmon will be exceeded.
3-Y-15-79	September 10	Reopening of the commercial salmon fishing season in subdistrict 6.	Fall chums are well distributed throughout the Tanana River in harvestable numbers.
3-Y-16-79	September 15	Closure of the commercial salmon fishing season in subdistrict 6.	The upper end of the 7,500-22,500 guideline harvest level of fall chum and coho salmon will be exceeded.

Attachment 2. Summary of 1979 Yukon district commercial and subsistence fishing regulations promulgated by the Board of Fisheries during meetings held December, 1978 (Juneau) and April, 1979 (Anchorage).

SECTION	ACTION TAKEN
5AAC 03.320. WEEKLY FISHING PERIODS. (c)(4)	Reduced fishing time from 5 to 4 days a week and established split fishing periods in section 4-A of subdistrict 4.
5AAC 03.320. WEEKLY FISHING PERIODS. (c)	Reduced fishing time by one day per week in all subdistricts during the fall chum fishing seasons.
5AAC 03.320. WEEKLY FISHING PERIODS. (c)(6)	Change the weekly fishing schedule in effect from June 15 through August 15 in subdistrict 6 (no change in total allowable fishing time).
5AAC 03.350. CLOSED WATERS. (c)(9)	Defined the waters closed to commercial salmon fishing at the mouth of the Anvik River.
5AAC 03.361. GUIDELINE HARVEST LEVELS.	Establish flexible guideline harvest levels of king, fall chum, and coho salmon to replace quota structure in all subdistricts.
5AAC 03.370. REGISTRATION AND REREGISTRATION. (c)(d)(e)(g)	Clarify subdistrict registration requirements.
5AAC 03.380. UNLAWFUL POSSESSION SUBSISTENCE TAKEN SALMON.	Prohibited purchase of salmon from which the dorsal fin has been removed and specify that subsistence caught salmon must have the dorsal fin removed in subdistrict 6.
5AAC 03.670. PERMITS FOR HERRING SPAWN.	Prohibited taking of herring spawn in the Cape Romanzof, Security Cove and Goodnews Bay districts.
5AAC 03.930. GEAR. (a)(2)(3)	Specified types of legal gear that may be operated to take fish resources other than salmon for subsistence in the A-Y-K area.
5AAC 03.980. PERMITS. (a)(2)(E)	Specified that a permit is required for subsistence fishing in the Circle-Eagle area.
5AAC 03.990. RESTRICTIONS. (e)(11)	Established an area, previously closed by regulation, where subsistence fishing for pike could occur in Tolovana River drainage near the village of Minto.

Attachment 3. List of 1979 Yukon area commercial and subsistence fishing regulations.

CHAPTER 03.
ARCTIC—YUKON—KUSKOKWIM AREA

ARTICLE 1.
DESCRIPTION OF AREA

5 AAC 03.100. DESCRIPTION OF AREA. The Arctic — Yukon — Kuskokwim area includes all Bering Sea, Chukchi Sea and Arctic Ocean waters of Alaska, including drainages, north of the latitude of Cape Newenham, west of 141° W. long., and includes the waters of St. Lawrence, St. Matthew and Nunivak Islands.

ARTICLE 2.
FISHING DISTRICTS AND SUBDISTRICTS

5 AAC 03.200. FISHING DISTRICTS AND SUBDISTRICTS

(e) Yukon District: all waters including those draining into the Bering Sea between the latitude of Canal Point Light and the latitude of the westernmost point of the Naskonat Peninsula;

(1) subdistrict 1: that portion of the Yukon River drainage from its mouth upstream to the mouth of the Anuk River and all waters of Black River including waters within one nautical mile of its mouth;

(2) subdistrict 2: that portion of the Yukon River drainage from the mouth of the Anuk River upstream to Toklik;

(3) subdistrict 3: that portion of the Yukon River drainage from Toklik upstream to the mouth of the Bonasila River;

(4) subdistrict 4: that portion of the Yukon River drainage from the mouth of the Bonasila River upstream to the mouth of Illinois Creek at Kallands

(A) section 4-A: that portion of the drainage from the mouth of the Bonasila River upstream to Cone Point;

(B) section 4-B: that portion of the drainage from Cone Point upstream to the mouth of Illinois Creek;

(5) subdistrict 5: that portion of the Yukon River drainage (excluding the Tanana River drainage) from the mouth of Illinois Creek to the U.S.-Canada border

(A) section 5-A: that portion of the drainage from the mouth of Ilinois Creek upstream to a marker placed two miles downstream of Waldron Creek;

(B) section 5-B: that portion of the drainage from a marker placed two miles downstream of Waldron Creek upstream to the U.S.-Canada border;

(6) subdistrict 6: the Tanana River drainage

(A) section 6-A: that portion of the drainage from the mouth of the Tanana River upstream to the mouth of the Kantishna River;

(B) section 6-B: that portion of the drainage from the mouth of the Kantishna River upstream to the mouth of the Wood River;

(C) section 6-C: that portion of the drainage from the mouth of the Wood River upstream to the mouth of the Chena River.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

ARTICLE 3.
SALMON FISHERY

5 AAC 03.310. FISHING SEASONS. (a) Except as provided in secs. 320-370 of this chapter, salmon may be taken as follows:

(3) in the Yukon district

(A) in subdistricts 1, 2 and 3 from June 10 through August 31, except that when June 10 falls within a closed weekly period the season will open the next following open weekly period; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

(B) in subdistricts 4, 5 and 6 from June 15 through September 30

(i) the early season is closed by emergency order and subsequent seasons are opened and closed by emergency order;

(ii) section 4-A closes August 1;

5 AAC 03.320. WEEKLY FISHING PERIODS.

(c) Yukon district

(1) subdistrict 1:

(A) June 10 through July 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(B) after July 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 p.m. Friday;

(2) subdistrict 2:

(A) June 10 through July 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(B) after July 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 p.m. Thursday;

(3) subdistrict 3:

(A) June 10 through July 25, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday;

(B) after July 25, salmon may be taken from 6:00 p.m. Monday until 6:00 a.m. Wednesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(4) subdistrict 4:

(A) in section 4-A from June 15 through August 1, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(B) in section 4-B from June 15 through August 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Friday;

(C) in section 4-B after August 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(5) subdistrict 5:

(A) in section 5-A from June 15 through August 15, salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Sunday;

(B) in section 5-A after August 15, salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Thursday and from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(C) in section 5-B salmon may be taken seven days a week;

(6) subdistrict 6:

(A) June 15 through August 15, salmon may be taken from 6:00 p.m. Wednesday until 6:00 p.m. Monday;

(B) after August 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday.

5 AAC 03.330. GEAR

(b) In the Yukon district

(1) in subdistricts 1, 2 and 3 set gill nets and drift gill nets may be operated;

(2) in subdistricts 4, 5 and 6 set gill nets and fishwheels may be operated;

(3) repealed (Eff. 3/26/76, Reg. 57);

(4) an individual may have in operation not more than one fishwheel at any one time;

(5) fishermen shall operate or assist in operating only one type of gear at any one time.

5AAC 03.331 GILL NET SPECIFICATIONS AND OPERATION.

(c) In the Yukon district

(1) the aggregate length of set gill net operated by an individual may not exceed 150 fathoms and the length of a drift gill net operated by an individual may not exceed 50 fathoms;

(2) in subdistricts 1 and 2, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between June 27 and July 5;

(3) in subdistrict 3, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between July 5 and 15.

(4) in subdistrict 4, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between July 10 and July 31.

(e) in the Arctic Yukon Kuskokwim area, gill net gear shall not obstruct more than one half the width of any waterway. In the intertidal zone this applies at any stage of the tide.

5 AAC 03.333. FISHWHEEL SPECIFICATIONS AND OPERATION. Fishwheel baskets must be stopped by the operator from rotating in the water during periods closed to commercial and subsistence fishing. The fishwheel vessel registrant is responsible for the operation of the fishwheel.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

5 AAC 03.334. IDENTIFICATION OF GEAR. (a) Each drift gill net in operation shall have at one end a red keg, buoy or cluster of floats plainly and legibly marked with the permanent registration number of the operator.

(b) Each set gill net in operation shall have at each end a red keg, buoy or cluster of floats, or, in the case of set gill nets anchored to land, shall have a red keg, buoy or cluster of floats at the outer end of the net, which shall be plainly and legibly marked with the permanent registration number of the operator.

(c) Each fishwheel in operation shall have plainly and legibly inscribed on it the permanent retgistration number of the operator. Numbers shall be at least six inches in height with lines at least one inch wide and shall be painted in contrasting colors. These numbers shall be placed on the side of the fishwheel facing midstream of the river.

5 AAC 03.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR.

(b) In the Yukon district

(1) subdistrict 1: no part of a set gill net may be operated within 300 feet of any part of another set gill net;

(2) subdistrict 2: no part of a set gill net may be operated within 200 feet of any part of another set gill net;

(3) subdistricts 4, 5 and 6: it is unlawful to set commercial fishing gear within 200 feet of other operating commercial or subsistence fishing gear.

5 AAC 03.350. CLOSED WATERS.

(c) In the Yukon district salmon may not be taken in the following locations:

(1) Acharon Channel of the south mouth area west of a line from a Department of Fish and Game shore marker below Chris Point bearing 285° to a Department of Fish and Game shore marker approximately 2½ nautical miles on the opposite side of the channel; this closed water area is also defined as west of a line established by a series of yellow and green barrels placed by the department between shore markers;

(2) Kawanak Pass of the middle mouth area outside of buoys placed offshore from Kothlik Island;

(3) other waters farther than one nautical mile from any grassland bank;

(4) waters outside of one nautical mile from the mouth of the Black River;

(5) waters of the Andreafsky River upstream of a line from markers placed on each side of the river at the mouth;

(6) Tanana River upstream of the mouth of the Chena River;

(7) tributaries of the Yukon and Tanana Rivers;

(8) all other waters of the district except in subdistricts 1 through 6.

(9) water of the Anvik River upstream of a line between Department of Fish and Game markers placed on each side of the river at its mouth.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

5 AAC 03.361. GUIDELINE HARVEST LEVELS. (a) In the Yukon district, the following are guideline harvest ranges for the subdistricts, sections and time periods specified:

(1) subdistrict 1 after July 15, subdistrict 2 after July 18 and subdistrict 3 after July 21: 120,000 to 220,000 chum salmon from the areas;

(2) subdistrict 3: 1800 to 2200 king salmon;

(3) subdistrict 4: 900 to 1100 king salmon and after August 15 in section 4 B, 10,000 to 40,000 chum and coho salmon combined;

(4) subdistrict 5: 2700 to 3300 king salmon and after August 15, 10,000 to 40,000 chum and coho salmon combined;

(5) subdistrict 6: 900 to 1100 king salmon and after August 15, 7500 to 22,500 chum and coho salmon combined for the area.

(b) The guideline harvest levels set forth in (a) of this section represent ranges of estimated allowable salmon harvests which will not jeopardize the viability of salmon stocks. The district, a subdistrict or section may close to salmon fishing before or after the guideline harvest has been reached if principles of management and conservation dictate such action, based on the biological conditions of the stocks.

5 AAC 03.370. REGISTRATION AND REREGISTRATION. (a) Simultaneously with the area registration specified in 5 AAC 39.120(c), each salmon net registrant shall indicate on the vessel license application or renewal form in which subdistrict the vessel is intended to be first used during the season.

(b) Subsequent to the initial registration for subdistricts 1 and 2 of the Yukon district, a registrant may operate a vessel in another subdistrict following reregistration for the subdistrict of intended operation. The registrant may not fish during the 48-hour waiting period following reregistration.

(c) In the Yukon district a salmon interim-use or entry permit holder whose vessel is registered to fish in subdistrict 3 may not fish in subdistricts 1 or 2 until after July 10.

(d) In the Yukon district a salmon interim-use or entry permit holder whose vessel is registered to fish in either subdistricts 1, 2 or 3 may not fish in subdistricts 4, 5 or 6.

(e) In the Yukon district a salmon interim-use or entry permit holder whose vessel is registered to fish in subdistricts 4, 5 or 6 may not fish in another subdistrict.

(f) In the Yukon district, a fisherman may register a vessel in only one subdistrict, including a vessel used to take salmon with a fishwheel. Fishwheel vessel registrants shall register the vessel by indicating on the vessel license application or renewal form the single subdistrict selected.

(g) In the Yukon district after fishing in either subdistricts 1 or 2 a salmon interim-use or entry permit holder must wait 48 hours before fishing in another subdistrict.

5 AAC 03.380. UNLAWFUL POSSESSION OF SUBSISTENCE TAKEN SALMON. It is unlawful to purchase salmon from which the dorsal fin has been removed as required by 5 AAC 01.240. Possession of salmon taken for subsistence purposes from which the dorsal fin has not been removed is prima facie evidence that the salmon was taken and possessed for commercial purposes.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

CHAPTER 27. HERRING FISHERY.

ARTICLE 13. STATISICAL AREA Q;

BERING SEA, KOTZEBUE AREA.

5 AAC 27.900. DESCRIPTION OF STATISTICAL AREA. Statistical area Q has as its southern boundary a line extending west from Dall Point and as its northern boundary a line extending west from Point Hope, and as its western boundary the International Date Line in the Bering Sea and Chukchi Sea.

5 AAC 27.905. DESCRIPTION OF DISTRICTS. (a) The Cape Romanzov district consists of all water of Alaska between the latitude of Dall Point and 62° N. lat.

5 AAC 27.910. FISHING SEASONS. Herring may be taken from May 1 through July 31 only in the districts listed in sec. 905 of this chapter.

5 AAC 27.930. GEAR. Herring may be taken only with purse seines, beach seines and gill nets.

(c) The mesh size of a herring gill net may not be less than 2-1/8 inches nor more than 2½ inches, except that in registration areas T, W, and Q the maximum mesh size may not exceed three inches.

5 AAC 27.931. GILL NET SPECIFICATIONS AND OPERATION. (a) Not more than 150 fathoms of herring gill net may be operated from any licensed fishing vessel and no single herring gill net may exceed 50 fathoms in length.

(b) Each gill net in operation must be buoyed at both ends and at least one buoy must be plainly and legibly marked with the permittee's herring interim-use or entry permit number.

5 AAC 27.932. SEINE SPECIFICATIONS AND OPERATION. No seine may be more than 850 meshes in depth and no seine may be more than 150 fathoms in length.

5 AAC 27.950. WATERS CLOSED TO HERRING FISHING. (a) In the Cape Romanzov district, the waters east of the longitude of Point Smith are closed to herring fishing.

(d) Herring may not be taken in any waters of statistical area Q that are not set forth in sec. 905 of this chapter.

(e) The Cape Romanzov district is closed to the commercial taking of herring spawn on kelp or on any other substrate.

5 AAC 27.960. GUIDELINE HARVEST LEVELS. (a) The guideline harvest level for taking herring in the Cape Romanzof district is 350 metric tons.

(e) The guideline harvest levels set forth in (a)-(d) of this section represent preseason estimated levels of allowable herring harvests which will not jeopardize the viability of herring stocks. A district or section may close to herring fishing before or after the guideline harvest level has been reached if principles of management and conservation dictate such action, based on the biological condition of the stocks.

5 AAC 27.980. POSSESSION OF SALMON. Salmon taken incidentally in conjunction with commercial herring fishing must be returned to the water.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

CHAPTER 1.
SUBSISTENCE FINFISH FISHING.

ARTICLE 4.
YUKON AREA.

5 AAC 01.210. FISHING SEASONS AND WEEKLY FISHING PERIODS. (a) Unless restricted in this section and sec. 225 of this chapter, salmon may be taken in the Yukon district at any time.

(b) In the following locations salmon may only be taken during the open weekly fishing periods of the commercial salmon fishing season and may not be taken for 24 hours before the opening and 24 hours following the closure of the commercial salmon fishing season.

(1) subdistricts 1, 2 and 3;

(2) subdistrict 4, excluding the Koyukuk and Innoko River drainages and excluding that area between the mouths of the Rodo and Nowitna Rivers where the requirements of sec. 225(f) of this chapter are effective;

(3) subdistrict 5, excluding the Tozitna River drainage and excluding section 5B;

(4) subdistrict 6 excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River.

(c) During any commercial salmon fishing season closure of greater than five days in duration, salmon may not be taken during the following periods in the following subdistricts:

(1) from June 10 to August 20 in subdistricts 1, 2 and 3 from 6:00 p.m. Monday until 6:00 p.m. Wednesday;

(2) in subdistrict 4, excluding the Koyukuk and Innoko River drainages and excluding that area between the mouths of the Rodo and Nowitna Rivers where the requirements of sec. 225(f) of this chapter are effective, salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(3) in subdistrict 5, excluding the Tozitna River drainage and section 5B, salmon may not be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday;

(4) in sections 6A and 6B of subdistrict 6, excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River, salmon may not be taken from 6:00 p.m. Saturday until 6:00 p.m. Monday.

(d) In section 6C of subdistrict 6 salmon may not be taken following the closure of the commercial salmon fishing season from: 6:00 p.m. Monday until 6:00 p.m. Friday.

(e) Except as provided in sec. 225 of this chapter, and except as may be provided by the terms of a subsistence fishing permit, there is no closed season on fish other than salmon.

Attachment 3 (continued) List of 1979 Yukon area commercial and subsistence fishing regulations.

5 AAC 01.220 **LAWFUL GEAR AND GEAR SPECIFICATIONS**. (a) Salmon may only be taken by gill net, beach seine or fishwheel, subject to the restrictions set forth in this section.

(b) In subdistricts 1 and 2, commercial fishermen may not take salmon for subsistence purposes by gill nets larger than six inch mesh after a date specified by emergency order between June 27 and July 15.

(c) In subdistrict 3, commercial fishermen may not take salmon for subsistence purposes during the commercial salmon fishing season by gill nets larger than six inch mesh after a date specified by emergency order between July 5 and July 15.

(d) In subdistrict 4, commercial fishermen may not take salmon for subsistence purposes during the commercial salmon fishing season by gill nets larger than six inch mesh after a date specified by emergency order between July 10 and July 31.

(e) In subdistricts 4, 5 and 6, salmon may not be taken for subsistence purposes by drift gill net.

(f) Fish other than salmon may only be taken by set gill net, drift gill net, beach seine, fishwheel, pot, long line, fyke net, dip net, jigging gear, spear or lead, subject to the following restrictions which also apply to subsistence salmon fishing:

(1) during the open weekly fishing periods of the commercial salmon fishing season, a commercial fisherman may not fish for commercial and subsistence purposes simultaneouly with more than one type of gear;

(2) the aggregate length of set gill net in use by an individual may not exceed 150 fathoms and each drift gill net in use by an individual may not exceed 50 fathoms in length;

(3) in subdistrict 4, 5 and 6, it is unlawful to set subsistence fishing gear within 200 feet of other operating commercial or subsistence fishing gear;

(4) a gill net may obstruct not more than one-half the width of any fish stream; a stationary fishing device may obstruct not more than one-half the width of any salmon stream.

5 AAC 01.221. **IDENTIFICATION OF GEAR**. In addition to the requirements of sec. 10(h) of this chapter:

(1) each fishwheel must have the first initial, last name and address of the operator plainly and legibly inscribed on the side of the fishwheel facing midstream of the river;

(2) for all gill nets and unattended gear that are fished under the ice, the first initial, last name and address of the operator must be plainly and legibly inscribed on a stake inserted in the ice and attached to the gear.

5 AAC 01.225. **WATERS CLOSED TO SUBSISTENCE FISHING**. (a) The following locations in the upper Yukon River drainage are closed to subsistence fishing, except that whitefish and suckers may be taken under the authority of a subsistence fishing permit designating restrictive measures for the protection of other fish:

(1) streams and within 500 feet of their stream mouths:

(A) Birch Creek, Beaver Creek, Clearwater Creek (Delta Clearwater Creek at 64°06′ N. lat., 145°34′ W. long.), Clear Creek (Richardson Clearwater Creek at 64°14′ N. lat., 146°16′ W. long.), Goodpaster River, Shaw Creek, Salcha River, Little Salcha River, Chena River, Chatanika River, Big Salt River, Hess Creek, and Blue Creek;

(B) the Dall River is closed from June 10 through September 10;

(2) streams: Ray River;

(3) lakes: Deadman, Jan, Boleo, Birch, Lost, Harding, Craig, Fielding, Two-Mile, Quartz, and Little Harding;

(4) sloughs: Cheno (Piledriver).

(b) The following drainages located north of the main Yukon River are closed to subsistence fishing:

(1) Kanuti River upstream from a point five miles downstream of the state highway crossing;

(2) Fish Creek upstream from the mouth of Bonanza Creek;

(3) Bonanza Creek;

(4) Jim River including Prospect Creek and Douglas Creek;

(5) South Fork of the Koyukuk River system upstream from the mouth of Jim River;

(6) Middle Fork of the Koyukuk River system upstream from the mouth of the North Fork, except between Dry Gulch and the mouth of Hammond River subsistence fishing is allowed under authority of a subsistence fishing permit only;

(7) North Fork of the Chandalar River system upstream from the mouth of Quartz Creek.

(c) The main Tanana River and its adjoining sloughs are closed to subsistence fishing between the mouth of the Salcha River and the mouth of the Gerstle River, except that salmon may be taken in the area upstream of the Richardson Highway bridge to the mouth of Clearwater Creek after November 20.

(d) The Tanana River drainage is closed to subsistence fishing for pike between the Kantishna River and the Delta River at Black Rapids on the Richardson Highway and Cathedal Rapids on the Alaska Highway, except that pike may be taken for subsistence purposes in the Tolovana River and adjoining sloughs and lakes between Department of Fish and Game regulatory markers placed approximately two miles upstream and downstream of the village of Minto.

(e) The Delta River is closed to subsistence fishing, except that salmon may be taken after November 20.

(f) Subdistrict 4, excluding the Koyukuk River drainage, between the mouth of the Rodo River and the mouth of the Nowitna River is closed to subsistence fishing after June 14 except that:

(1) subsistence fishing is permitted during open commercial salmon fishing periods after July 15;

(2) during the period June 15 to July 15 fish other than salmon may be taken under the authority of a subsistence salmon fishing permit.

5 AAC 01.230. **SUBSISTENCE FISHING PERMITS.** (a) Except as provided in this section, fish may be taken for subsistence purposes without a subsistence fishing permit.

(b) A subsistence fishing permit is required as follows:

(1) for the Yukon River drainage from the mouth of Hess Creek to the mouth of the Dall River.

(2) for fish other than salmon in the Yukon River drainage from the mouth of the Rodo River to the mouth of the Nowitna River, from June 15 to July 15;

(3) for the Yukon River drainage from Department of Fish and Game regulatory markers placed near the upstream mouth of 22 Mile Slough upstream to the U S Canada border;

(4) for the Middle Fork drainage of the Koyukuk River system between Dry Gulch and the mouth of Hammond River;

(5) for the Tanana River drainage above the mouth of the Wood River;

(6) for whitefish and suckers in the waters listed in sec. 225(a) of this chapter.

(c) In addition to the subsistence fishing permit conditions set forth in sec. 15 of this chapter, permits issued for fish other than salmon may also designate restrictive measures for the protection of salmon.

(d) Only one subsistence fishing permit will be issued to each household per year.

5 AAC 01.240. MARKING OF SUBSISTENCE TAKEN SALMON. In subdistrict 6 no person may possess salmon for subsistence purposes unless the dorsal fin has been immediately removed from the salmon. It is unlawful to purchase salmon from which the dorsal fin has been removed. Possession of salmon taken for subsistence purposes from which the dorsal fin has not been removed is prima facie evidence that the salmon was taken and possessed for commercial purposes.

Attachment 4. Summary of special projects conducted in the Yukon Area by the Division of Commercial Fisheries, 1979.

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1. YUKON RIVER TEST FISHING

a. Location: Middle Mouth (Kawanak Pass) and Big Eddy (Kwikluak Pass near Emmonak in the south mouth) of the Yukon River.

b. Objectives: Determine run timing and relative abundance of king and summer chum, fall chum and coho salmon in the lower Yukon River.

c. Results:

1) Middle Mouth: A total of 804 king and 2,472 summer chum salmon was taken in index set gillnets from June 18 through July 14. Peaks in the king salmon migration occurred during June 24-26. Peaks in the summer chum migration occurred during June 20-21, June 24-26 and July 2-9.

2) Big Eddy:

(A) King and summer chum salmon: A total of 1,050 king and 798 summer chum salmon was taken in index set gillnets from May 26 through July 14. Peaks in the king salmon migration occurred during June 6-7, June 10-11 and June 27-28. Peaks in the summer chum salmon migration occurred June 10-11 and July 4-5.

(B) Fall chum and coho salmon: a total of 1,787 fall chums and 518 coho salmon was taken in index set gillnets from July 15 through August 26. Peaks in the fall chum migration occurred during August 4-6, August 17 and after August 26. Peaks in the coho salmon migration occurred during August 17-18.

2. SUBSISTENCE SALMON FISHERY SURVEYS

a. Location: Yukon, Koyukuk, Tanana Rivers, and Yukon Territory Villages.

b. Objectives: Determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals; also collect tag recoveries from high seas and Department tagging programs.

c. Results: A total of 681 fishing families were surveyed in the Yukon area and their catches totaled 35,205 king salmon and 452,328 other salmon. A total 1,000 river miles traveled by boat and 500 air miles by single engine aircraft in conducting the survey. Yukon territory subsistence catch data was furnished by Environment Canada - Fisheries Service (Whitehorse Office).

3. YUKON RIVER ANADROMOUS FISH INVESTIGATION

a. Location: Yukon River drainage.

b. Objectives: Develop estimates or indices of magnitude and quality of king and chum salmon escapements; determine size and effect of commercial and subsistence harvest on various stocks of king and chum salmon; plus relate collected data to long-term trends in the salmon stocks and evaluate management procedures needed to maintain them at their level of maximum yield.

c. Results: The king salmon escapement for the Anvik River in 1979 was estimated to be 1,474. A total of 1,184 king salmon were enumerated at the Whitehorse fishway in 1979. This was the largest count since 1962.

The 1979 Anvik River sonar count of summer chums was 280,537, 33% of the record escapement for the parent year 1975. Escapements of summer chums in other systems were also less than 1975. Fall chum escapements in 1979 were above average in the Tanana River system but below average elsewhere. A total of 8,125 fall chums were observed in the Delta River, the third highest escapement documented. In the Fishing Branch River (Porcupine River drainage) the 1979 escapement was estimated at 44,080, substantially less than exceptionally large escapement of 353,282 documented in the 1975 parent year.

4. COMMERCIAL SALMON CATCH SAMPLING

a. Location: Various locations in the different subdistrict fisheries.

b. Objectives: Obtain age, sex and size information for commercially caught fish.

c. Results: Several hundred samples of king, chum and coho salmon were collected in 1979. Detailed age, sex and size composition data has been compiled and will be presented in a subsequent separate report.

5. YUKON RIVER FALL CHUM AND COHO SALMON TAG-RECOVERY PROJECT

a. Location: Tanana River drainage.

b. Objectives: The primary objective of this study is to determine the relative timing and distribution of various stocks past the commercial fishery in order to provide for more effective management.

c. Results: In 1979 a total of 7,424 fall chum and 510 coho salmon, captured with two fishwheels in the Tanana River (located in the vicinity of the village of Manley) were tagged during the period August 15 through early October. A total of 1,309 (27.9%) tagged chum and 37 (7.3%) coho salmon were recovered. Results from the 1979 tagging project indicate that fall chums bound for the upper Tanana River drainage were

predominately north bank oriented while Toklat River (lower Tanana R. system) were mainly south bank oriented.

6. CAPE ROMANZOF HERRING PROJECT

a. Location: Kokechik and Scammon Bay.

b. Objective: Determine spatial and temporal distribution and relative abundance of spawning herring and collect information on spawn density and mortality. Collect age, sex, size and maturity information of herring.

c. Results: A total of 3,279 herring were caught in sampling gill nets during the period May 13 through June 7. Spawning occurred prior to May 13 and continued throughout the project's duration. Both the magnitude of the run and the size of fish were considerably larger than 1978. As in previous years spawn was deposited primarily on Fucus seaweed. The density of spawn ranged from light to extremely heavy with several instances of "cauliflower" layering. Observed spawn mortality was in excess of 80% in some areas. The majority of the sampled herring were ages 5 and 7.

ATTACHMENT 5.

1979 YUKON AREA SALMON MANAGEMENT PLAN FOR COMMERCIAL AND SUBSISTENCE FISHERIES

ALASKA DEPARTMENT OF FISH AND GAME
Division of Commercial Fisheries
Arctic-Yukon-Kuskokwim Region

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1979 YUKON AREA SALMON MANAGEMENT PLAN

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

INTRODUCTION

This management plan was developed in order to inform fishermen, processors and other interested persons about the status of the 1979 Yukon River salmon runs and Department strategies that may be used to regulate the various fisheries. Statements made concerning anticipated run magnitudes and management strategies are based on the best information presently available. Statements regarding fishing times and relative sizes of the runs should be considered as tentative and subject to change. This management plan will be updated and improved as information from ongoing and proposed Department programs becomes available.

The overall objective of the Yukon area research and management programs is to manage the various salmon runs for sustained yield. The commercial fishery is regulated on the assumption that a harvestable salmon surplus, after providing for spawning and subsistence utilization requirements, is available.

Subsistence has been designated by the Legislature (State Law 151) as the highest priority among beneficial users of the fish and game resources. Except in areas where intensive commercial fisheries occur, the subsistence fishery is subject to few restrictions in order to give preference to subsistence users. In the major commercial fishing areas the majority of the fishermen usually take salmon for both commercial and subsistence. Therefore, in order to enforce commercial fishing regulations, it is necessary to place some restrictions on the subsistence fishery. For example, subsistence fishing is allowed only during the open periods of the commercial fishing season and during the closed periods both commercial and subsistence fishing is prohibited.

Management is made difficult by the character of the salmon runs, fisheries and the river itself. Since most of the commercial fisheries have only developed or expanded in recent years, there is a lack of adequate escapement and return data on which to fully evaluate the effects of increased commercial harvests. The various fisheries scattered over 1,400 river miles harvest mixed stocks usually several weeks and hundreds of miles from their spawning grounds. Because the Yukon River commercial fishery is essentially a "cape fishery" (fishing on mixed stocks) some tributary populations may be under or overharvested in relation to their actual abundance. For example, in a mixed stock fishery, where it is impossible to manage each stock separately, small spawning populations may be reduced to very low levels or even eliminated.

Due to the turbid water conditions of the main river and the vast size of the drainage (330,000 square miles), one-third of which is in Canada, accurate inseason assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology and funding. Management is also hampered by the variable run timing and pattern of entry into the lower fishery. Comparisons of catch data between years is thus made difficult.

New research projects are underway and other programs are planned,

once additional funding becomes available, to obtain the biological information necessary for better management of the salmon runs. For example, a comprehensive tag-recovery program was begun in 1976 to determine the relative timing and distribution of fall chum stocks through the commercial fishery. If individual stocks can be identified from this program and concurrent scale analysis studies, then the fishery can be more effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of run strength in the main river, and upgrading escapement documentation in the tributary streams.

As a result of the difficulty in obtaining the necessary biological information, the mixed stock situation, increased effort and efficiency of the commercial fishery, and because of the need to provide for subsistence which has been designated the highest priority by the Legislature, the management of the Yukon River salmon runs must take a conservative approach. This can be achieved by establishing harvest guidelines, mesh size, reduced weekly fishing periods, fishing season closures, etc. During the fishing season if it becomes apparent that the run is substantially smaller-or-larger than needed for escapement and subsistence requirements, then the commercial harvest rates will be adjusted through the use of the emergency order, or less frequently emergency regulation authority.

Also affecting management is the interception of western Alaskan salmon (including Yukon River stocks) by the Japanese high seas fishery. King salmon catches by this fishery have averaged 284,000 fish annually since 1966 and reached a peak catch of 554,000 kings in 1969. In some years the Japanese catch has exceeded the total western Alaskan catch (commercial and subsistence). The majority of kings taken are immature (4 year olds) averaging 6 pounds each whereas most of the adults (mostly 6 year olds) taken by Alaskan fishermen averaging 20-25 pounds. Based on tagging and scale analysis studies it is estimated more than 80% of the Japanese catches of king salmon are of western Alaska origin.

Western Alaskan chum salmon are also believed to be intercepted in substantial numbers by the Japanese fishery in the Bering Sea. This fishery annually harvests 2-4 million chums; however the degree of interception is unknown because of limited tagging studies.

An International treaty (the I.N.P.F.C.) has been recently renegotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns beginning in 1980 and possibly 1979 may be expected as a result of reduced high seas interceptions.

STATUS OF STOCKS AND FISHERY:

King Salmon: The Yukon River commercial king salmon fishery in Alaska dates back to 1918. Since 1961 commercial catches have ranged from 63,700 to 129,700 fish and the recent 5 year average (1974-78) is 88,700. In addition to the Alaskan catch, the commercial fishery at Dawson (Yukon Territory) harvests 2-3,000 kings annually (recent 10 year average). Throughout the Yukon River drainage approximately 15-25,000 kings are taken annually for subsistence use.

Spawning populations of king salmon are widely distributed throughout the drainage and have been documented in the Archuelinguk River located 85 miles from the mouth of the Yukon River and as far upstream as the headwaters of the drainage in the Yukon Territory of Canada, nearly 2,000 miles from the mouth. Major spawning streams in Alaska include the Andreafsky, Anvik, Nulato, Salcha and Chena rivers. In the Canadian portion of drainage, important systems include the Big Salmon and Nisutlin Rivers.

Commercial fishing effort has increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled in number. In excess of 150 units of fishwheel gear are also fished (upper Yukon area only). With the advent of the Limited Entry Program, fishing effort has apparently stabilized.

Yukon River king salmon runs since 1971 have generally declined in magnitude based on available comparative catch and escapement data. Countering this trend, good runs occurred in 1977 and 1978 when 96,400 and 97,600 kings were commercially harvested. Escapements into key survey streams were also strong especially in 1978 when record escapements were documented.

Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. However, with the exception of 1971, 1977 and 1978, escapements have not reached the levels observed during the early 1960's prior to maximum development of the commercial fishery.

Summer Chum Salmon: Prior to the mid 1960's summer chums were used primarily for subsistence purposes, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967 commercial fishing regulations regarding summer chums were gradually liberalized. As a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season), increased fishing effort and processor facilities, development of Japanese markets and the occurrence of very large runs in recent years, the Yukon River summer chum salmon commercial harvest has increased sharply. Only 11,000 summer chums were taken commercially in 1967 while a record 1,053,200 fish were harvested in 1978. The recent 5 year average commercial harvest (1974-78) is 704,900 fish. The majority of the commercial harvest takes place in subdistricts 1, 2 and 4. It is estimated that 197,000 summer chums are taken annually (1974-78 average) for subsistence in the Yukon River drainage.

Summer chums exhibit similar run timing as the kings, entering the lower river during June and early July. Major spawning tributaries include the Andreafsky and Anvik Rivers and several others upstream to and including those of the Koyukuk River drainage. Department tag and recovery population estimates indicated total Yukon River runs of 3.2 and 1.6 million summer chums in 1970 and 1971, respectively. The total Yukon River summer chum salmon run in 1975 was estimated to be in excess of 5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. An escapement of over one million summer chums was estimated in 1975 in the Anvik River. Overall, Yukon River summer chum escapements have been good in recent years, however escapements in that portion of the drainage upstream of the Koyukuk River mouth have been variable.

Fall Chum Salmon: The commercial fishery for fall chum salmon in the Yukon River began in the early 1960's, however the fishery has undergone recent expansion since 1968. Commercial catches have ranged from 8,300 in 1964 to 273,100 in 1974 and the recent 5 year average (1974-78) harvest is 238,800 fish. In the face of increasing fishing effort and catches, the Department established a 250,000 maximum harvest limit for the entire river until future returns from current levels of harvest can be evaluated. This maximum harvest was used beginning in 1974 as a basis for establishing subdistrict quotas.

Because of their good quality (bright, silvery appearance, large size, robust body shape and high oil content) which is related to their upriver spawning distinations, fall chums are in great demand and are harvested in all fishing subdistricts. The majority (approximately 80%) of the fall chum commercial catches are presently taken in the lower three subdistricts. Fall chums are of less importance for subsistence than summer chums throughout the Yukon River drainage except upstream of the mouth of the Koyukuk River where it is estimated that fall chums comprise 60-75% of the total subsistence harvest. The annual subsistence catch of fall chums in the Yukon River drainage is approximately 89,000 fish (1974-78 average).

Fall chums enter the lower Yukon River beginning in mid-July and continue through early September. Major spawning areas are located in the Tanana River (Toklat River, Delta River and the upper Tanana River near Big Delta) and the Porcupine River (Sheenjek and Fishing Branch Rivers) drainages. Tagging studies indicate that the early run (late July-early August) of fall chums is bound for the Porcupine River system and Yukon Territory systems. The late run of fall chums (mid August-early September) is believed destined primarily for the Tanana River. Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River system. For example, recent escapements to the Fishing Branch River have ranged from 353,000 (1975) to 13,000 (1976).

In recent years, as additional information has become available (comparative catch and escapement data), it has been evident that the size of the Yukon River fall chum runs has fluctuated sharply depending on brood year run strength and environmental factors. In order to provide for more flexible management of the variable fall chum runs, the Board of Fisheries replaced the rigid quotas with guideline harvest levels (range of 147,500 to 322,500) and reduced fishing time effective for the 1979 fishing season.

Coho Salmon: This species is of minor importance in both in the commercial and subsistence fisheries. The commercial catch since 1961 have ranged from 350 to 38,000 and the recent 5 year average (1974-78) is 17,600 fish. Cohos first enter the lower Yukon River about one week later than fall chums and the run peaks during late August. Spawning occurs discontinuously throughout the drainage with the largest spawning concentrations documented in the tributaries of the upper Tanana River drainage.

The commercial harvest of cohos is dependent upon fishing effort exerted on the more numerous fall chums. Consequently, no specific management strategy has been developed for coho salmon. Future expansion of the coho fishery appears unlikely at this time.

OUTLOOK FOR 1979

King Salmon: In most years the dominant age class returning are 6 year old fish, however, 5 and 7 year old fish may also contribute substantially to the run. The 1973 brood year run (6-year olds) was below average to average in abundance as indicated by comparative catch and escapement data. Escapement of king salmon in the Salcha and Chena Rivers was especially poor in 1973 and was attributed to poor survival of the 1967 brood year as a result of the August 1967 Tanana River flood. Seven year old fish (1972 brood year) are expected to contribute substantially to the return in 1979 based on the strong return of 6 year olds (approximately 72%) in 1978. Also five year olds (1974 brood year) may contribute significantly to the return in 1979 because of average-above average brood year run strength and possible reduced high seas interceptions.

In summary, based on evaluation of brood year run size data, it is expected that the 1979 Yukon River king salmon run will be below average to average in magnitude. The expected commercial catch should range between 70-80,000, the guideline harvest level for the entire river.

Summer Chum Salmon: Normally the Yukon River summer chum (dog salmon) runs are composed of four year old fish, although in some years five year old fish are present in large numbers. The return of four year olds in 1979 will be dependent on the strength of the 1975 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1975 summer chum run was considered substantially above average in magnitude. Also the return of five-year-old (1974 brood year) fish may contribute significantly to the run in 1979.

In summary, the magnitude of the Yukon River summer chum run in 1979 is expected to be above average. The expected commercial harvest should total 750,000-1,500,000 fish for the entire river.

Fall Chum Salmon: Similar to the summer run, the majority of the fall chums returning each year are four year old fish. Based on comparative catch and escapement information, the 1975 brood year run (4 year olds) was generally considered substantially above average in magnitude. It is expected that the return of five year olds (1974 brood year) may also contribute significantly to the return in 1979.

In summary, the 1979 Yukon River fall chum salmon run is expected to be above average in magnitude. The expected commercial harvest should range between 250,000-325,000 fish, the upper end of the guideline harvest level for the entire river.

Coho Salmon: The coho salmon run annually is much smaller than the fall chum run, and the harvest is dependent on the duration of the fishery for fall chums. The harvest is expected to total 20-30,000 fish for the entire river.

MANAGEMENT STRATEGY, LOWER YUKON (SUBDISTRICTS 1, 2 AND 3) FISHERIES

King and Summer Chum Salmon: Sustained yield management of the king and summer (dog) chum salmon runs is complicated by the fact that both species exhibit similar run timing. However, chum salmon are more abundant than king salmon, and during some recent years additional

numbers could have been harvested. The harvest of summer chums in the lower river is dependent on the regulations and management strategies employed toward the more intensively managed king salmon fishery. Even if an exceptionally large run of summer chum salmon develops, the harvest of summer chums may not be more than average because of the overriding importance of king salmon, especially if the king run is small.

The lower Yukon River king and summer chum fisheries (set and drift gill nets only) are primarily regulated by scheduled weekly fishing periods. The fishing schedule is normally two periods a week, totaling 2-1/2 days (24 and 36 hour periods) which allow effort to be distributed throughout the run. Fishing periods may be changed by emergency order depending on the strength of the run as indicated by analysis of comparative catch statistics. The fishing season opens by regulation June 10 which affords protection to the early part of the run. Later in the season during late June-early July only six inch maximum mesh size gillnets may be operated (there is no mesh size restrictions earlier in the season) which allows the harvesting of the normally more abundant summer chums while affording protection to the late king run.

A commercial guideline harvest of 70-80,000 king salmon for the entire river in Alaska has been established. Adherance to this guideline harvest level is essential in order to provide for additional escapements because of recent declines in the run and increasing fishing effort. This guideline harvest should not be exceeded unless an exceptionally large run is indicated, as such occurred in 1977 and 1978. In subdistricts 1 and 2, the combined harvest should not exceed 63-73,000 kings. The subdistrict 3 king salmon fishery is governed by a 1,800-2,200 guideline harvest level. (The upper Yukon subdistricts are limited by a combined 4,500-5,500 king salmon guideline harvest level).

If the king salmon run is small, fishing time in subdistricts 1 and 2 will be initially reduced from 2-1/2 to 2 days a week not later than June 20-25 (for normal run timing). Additional reductions in fishing time or an early closure of the season may be necessary if indicated low abundance of kings continues in order to provide for adequate escapements and subsistence requirements.

A reduction in fishing time, because of a poor king run, is favored instead of complete early season closure in June as this would prevent any harvest of summer chums. Achievement of an optimum harvest of summer chums while providing protection of king salmon, especially during small runs, is a complex problem facing management.

An additional option other than a season closure is the regulation which allows by emergency order a changeover to 6 inch or less mesh nets during June 27-July 5. This regulation allows harvesting of the more abundant chums during this period and minimizes the catch of kings. It should be clearly stated that the Department recognizes the importance of the long established king salmon fishery. The intention of the 6 inch or less maximum mesh size regulation in the lower two subdistricts is to allow an optimum harvest of chum salmon after a normal harvest of king salmon, consistent with spawning ground and subsistence fishery requirements, has been made.

In some years because of an early breakup substantial numbers of king salmon are present in the lower river during early June. It may be desirable to allow a limited harvest on this early segment of the run in order "to spread" the catch over most of the entire run. Often during "early years" the run is essentially over by late June. If an exceptional early breakup and run occurs, test fishing and subsistence catches will be closely monitored. An early opening (before June 10) of the season in subdistricts 1 and 2 with restricted fishing time (24 hour fishing periods) may be allowed by emergency order only if large, sustained test fishing and subsistence catches are occurring.

In subdistrict 3 the changeover date to gillnets of 6 inch or smaller mesh will take place after a date between July 5-15 following the closure of the king salmon season. The reopening of the commercial fishing season will be dependent on the timing of the salmon runs in order to minimize the incidental capture of the late run of kings which are traditionally utilized for subsistence in this subdistrict. Also the reopening of the season will be dependent on the market quality of summer chums.

During years of very large summer chum salmon runs the processing capacity of some lower Yukon operators has been exceeded resulting in wastage by both processors and fishermen. This problem occurs more frequently when only 6 inch or smaller mesh gillnets are fished. Processors are encouraged to avoid wastage problems by placing their fishermen on limits for example.

If the summer chum run is judged to be considerably below average than expected in 1979 then a reduction in fishing time in late June - mid-July may be required.

Fall Chum and Coho Salmon: Effective for the 1979 fishing season the Board of Fisheries made two important regulation changes affecting the lower Yukon fall chum and coho salmon fisheries: establishing guideline harvest levels and reducing fishing time.

The 200,000 chum quota in effect after mid July for subdistricts 1, 2 and 3 combined was replaced by a flexible guideline harvest level of 120,000 to 220,000 chums. In those years when the fall chum run is of average magnitude, the harvest should approximate 170,000 fish, the midpoint of guideline harvest level range. This midpoint harvest level represents 30,000 less fish than the previous 200,000 quota as the Board of Fisheries reallocated 30,000 additional fish to the upper Yukon area. If the fall run is substantially below or above average then the harvest will likely be at the lower (120,000) or higher (220,000) range of the guideline harvest level.

The Board of Fisheries also reduced weekly fishing time in all lower Yukon subdistricts by one day. In subdistricts 1 and 2 (after July 15) allowable fishing time was reduced 3 to 2 days per week and in subdistrict 3 fishing time (after July 25) was reduced from 4 to 3 days per week. Similar reductions in fishing time were also implemented by emergency order in 1977 and 1978.

The reduction in fishing time will help minimize overharvesting of certain run segments (especially the early portion); spread out the effort over a greater portion of the season; and result in a better

allocation of the guideline harvest between subdistricts in the lower Yukon area. A reduced fishing schedule will also minimize the possibility of processors being "swamped" with huge deliveries (up to 75,000 fish taken during a single fishing period in subdistrict 1) that have occurred in the past. Furthermore, extension of the season would provide for additional harvest of the coho salmon run which peaks later (after August 15).

In subdistricts 1 and 2 the fishing schedule during the fall chum run of two 24 periods per week also affects subsistence fishing since during the closed commercial periods subsistence fishing is prohibited. An additional fishing period each week for subsistence may be allowed beginning on or about August 10 by emergency order. Continuation of these special subsistence fishing periods during the season will be based on available enforcement surveillance by Protection officers and if violations are minimal. In 1978 a special 24 hour subsistence fishing period was allowed, however some violations occurred (selling of subsistence caught fish). After August 20, if the commercial fishing season has closed, subsistence fishing will be allowed seven days a week.

MANAGEMENT STRATEGY, UPPER YUKON (SUBDISTRICTS 4, 5, AND 6) FISHERIES

King and Summer Chum Salmon: As in the lower Yukon area, the king and summer chum (dog) salmon runs in the upper Yukon area exhibit similar run timing. The upper Yukon area the commercial king salmon fishery is primarily regulated by a 4,500-5,500 fish guideline harvest level (adopted by the Board of Fisheries in December, 1978 to replace the previous quotas) apportioned to the various subdistricts. Presently there is no guideline harvest levels on the numbers of summer chums that may be taken. The management of the summer chum salmon fishery is based on in-season assessment of run strength.

Also in section 4-A of subdistrict 4, where the majority of the summer chum harvest is taken in the upper Yukon area, the weekly fishing schedule was reduced from a single 5 day period to two-2 day periods by the Board. This action was taken because of increased fishing effort and the necessity to provide for balanced harvests and escapements for the various run segments.

If either a weak run of kings or summer chums develops during 1979 in the upper Yukon area then the Department would consider various restrictions. These restrictions would probably vary in each subdistrict because of the different types of fisheries and the importance of the species harvested.

Fishermen in subdistrict 4 usually retain their kings for subsistence rather than sell them in order to allow the commercial fishing season to remain open for the more abundant and commercially valuable summer chums. However, because of a substantial increase in fishing effort due to the rapid development of the commercial fishery, the total harvest of kings (commercial plus subsistence) may exceed traditional harvest levels in these subdistricts.

If the king salmon guideline harvest level (900-1,100 fish) is taken (before July 10) in subdistrict 4, the commercial fishing season

would be closed by emergency order. The season would be reopened during the period July 10 to July 31 to fishing with gill nets of six inch or smaller mesh and fishwheels. This action would minimize additional harvest of large king salmon and still allow continued commercial fishing on the more abundant summer chums. (Subsistence fishermen who do not fish commercially would be exempt from using 6 inch or smaller mesh nets).

If the summer chum salmon run was below average in magnitude, then fishing time in subdistrict 4 would be reduced. A reduction in fishing time would lessen the harvest and allow the fishery to be "more spread out" over a greater portion of the run.

In subdistrict 5 kings are of greater importance and are mostly taken with gillnets for both commercial and subsistence purposes. Summer chums are not abundant and are mainly retained for subsistence. Once the king salmon quota was taken in this subdistrict the fishery would be closed until the fall season.

If the king run was poor, then fishing time would be reduced.

In subdistrict 6 (Tanana River drainage) fishwheels are primarily used to harvest kings and summer chums for both commercial and subsistence purposes.

It is anticipated that the 1979 return of king salmon to the Tanana River drainage will be considerably below average in abundance based on poor production of the dominant 6 yr old age class in 1967 and 1973. The 1967 escapement was adversely affected (loss of eggs; disturbance of spawning beds) by the Tanana River flood in August of that year. In 1973 king salmon escapements to the Salcha and Chena Rivers were the lowest ever recorded.

In order to bolster king salmon escapements in view of the expected poor run, the Department is considering reducing fishing time (presently 5 days a week) in subdistrict 6 by emergency order either prior to the opening of the season (June 15) or during the season. Another option under consideration would change the fishing schedule by providing for two fishing periods a week instead of the present single 5 day period. Reducing fishing time and/or providing for split periods will spread out the effort and minimize overharvest of various run segments.

If the return of king salmon was larger than expected and the king salmon guideline harvest level was taken, then the commercial fishing season would be closed. A season closure would also aid in bolstering summer chum salmon escapements since Tanana River drainage summer chum salmon runs are not large. If subsistence summer chum catches taken during the season closure appear average or above average in abundance, then a reopening of the commercial season on a reduced fishing schedule would be considered.

Fall Chum and Coho Salmon: In the upper Yukon area fall chum and coho salmon are present during the period from mid-August through September. The commercial salmon fishery during this period is primarily regulated by a 27,500-102,500 combined chum and coho salmon guideline harvest which is apportioned to three subdistricts. This guideline harvest level, adopted by the Board of Fisheries for 1979, replaced the previous 50,000 quota. Unless there are indications that the fall chum run is either very small or very large, the midpoint (65,000 fish) of the guideline harvest level will be the expected catch. As in the lower Yukon area, cohos are of minor importance and are taken incidentally to the more abundant fall chums.

Also effective for the 1979 fishing season the Board reduced fishing time for the fall chum and coho fishery (after August 15) from 5 to 4 days a week in section 4-B of subdistrict 4, section 5-A of subdistrict 5 and subdistrict 6. Also the fishing schedule was split into two-2 day periods. Reducing the weekly fishing time will provide for better balanced harvests and escapement.

If a weak run of fall chums is indicated (based on lower Yukon area catches), then a closure of the season rather than a reduction of fishing time would be implemented by emergency order. A season closure of the commercial fishery would have less impact on subsistence fishing than a further cutback in fishing time.

The lower end of the guideline harvest level may be taken in some subdistricts if a weak run occurs. On the other hand, if the runs are large, then the upper end of the guideline harvest levels will be allowed to be taken by providing for additional fishing time.

In subdistrict 6 a delay in the opening of the fall season will be implemented by emergency order to provide for a more equitable harvest. In some years, the greater majority of the catch quotas were taken in the lower portions of subdistrict 6. A delay in the opening of the season, would allow the fall chum run to distribute itself throughout the subdistrict. This in turn would provide a more equitable harvest among various fishermen groups. Also, more importantly, balanced escapements of all spawning stocks would be realized since the harvest would be "spread out" over a longer period of time. This strategy has been endorsed by the Board of Fisheries.

ENFORCEMENT

The Board of Fisheries at its December 1977 meeting adopted a public proposal to repeal regulations which administered the legislation pertaining to the sale of subsistence caught salmon roe. The 1978 Legislature did not pass a bill to allow continuation of subsistence roe sales in view of the Board's action. Therefore, sale of subsistence roe is illegal.

At the April 1979 meeting the Board adopted a proposal requiring the immediate removal of the dorsal fin from subsistence caught salmon in subdistrict 6. This action was necessary for enforcement purposes in order to distinguish between subsistence caught and commercially taken salmon. In recent years subsistence caught salmon have illegally entered commercial channels.

Fishermen are requested to report any instances of fishery violations to Department of Fish and Game or Division of Fish and Wildlife Protection (Dept. of Public Safety) personnel in order that follow-up action may be taken.

Questions or comments concerning the 1979 Yukon Area Salmon Management Plan should be directed to:

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Pt. HOPE

BROOKS RANGE

KOTZEBUE SOUND

SEWARD PENINSULA

Porcupine R.

Chandalar R.

Ft. YUKON

YUKON R.

KOYUKUK R.

STEVENS VILLAGE

CIRCLE

334-50

(Y-5)

ILLINOIS Cr.

YUKON R.

GALENA

RUBY

TANANA R.

FAIRBANKS

334-40 (Y-4)

334-60

(Y-6)

NENANA

NORTON SOUND

(Y-1)

334-10

YUKON MANAGEMENT

AREA

BONASILA R.

(Y-2)

334-20

(Y-3)

334-30

YUKON AREA

12.

Commercial salmon catch and effort data Yukon area, 1978

Subdistrict	Fishing Vessels	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total
1	429	57,890	388,492	135,065	523,557	16,262	597,709
2	204	32,335	225,440	51,646	277,086	5,835	315,256
3	22	2,917	27,201	11,527	38,728	758	42,403
Subtotal Lower Yukon	655	93,142	641,133	198,238	839,371	22,855	955,368
4	82	701	364,387	11,230	375,617	32	376,350
5	53	3,115	4,897	21,010	25,907	7	29,029
6	38	644	34,675	13,259	47,934	3,066	51,644
Subtotal Upper Yukon	173	4,460	403,959	45,499	449,458	3,105	457,023
Total	828	97,602	1,045,092	243,737	1,288,829	25,960	1,412,391

Commercial Salmon Catches, Yukon Area, 1961-1978

	Kings	Summer Chums	Fall Chums	Total Chums	Coho	Total
1961	120,260		42,577	42,577	2,855	165,692
1962	94,374		53,160	53,160	22,926	170,460
1963	116,994				5,572	122,566
1964	93,587		8,347	8,347	2,446	104,380
1965	118,098		23,317	23,317	350	141,765
1966	93,315		71,045	71,045	19,254	183,614
1967	129,706	11,179	38,274	49,453	11,047	190,206
1968	106,526	14,470	52,925	67,395	13,303	187,224
1969	90,223	60,569	131,291	191,860	14,981	297,064
1970	80,269	137,368	209,356	346,724	12,245	439,238
1971	110,507	100,090	189,594	289,684	12,203	412,394
1972	92,840	135,668	152,176	287,844	22,233	402,917
1973	75,353	285,844	232,090	517,934	36,641	629,928
1974	97,919	604,210	273,158	877,368	16,240	991,527
1975	63,740	728,156	265,156	993,312	2,346	1,059,398
1976	88,671	598,227	163,282	761,509	5,197	855,377
1977	96,414	548,958	248,739	797,697	38,021	932,132
1978	97,602	1,045,092	243,737	1,288,829	25,960	1,412,391